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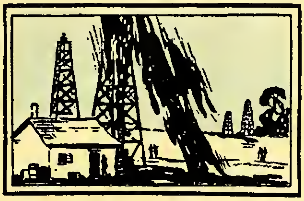

Alaska Brown Bear

* * *

Life and Climate of Primeval Louisiana

* * *

Hydrographic Studies in Louisiana

* * *

Forestry Views of Franklin D. Roosevelt

Published Quarterly by the
DEPARTMENT OF CONSERVATION

STATE OF LOUISIANA

JANUARY
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JAMES P. GUILLOT . . . . . Editor
N. E. SIMONEAUX . . Assoc. Editor

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New Refrigeration to Ship Oysters

WHAT is believed to be an innovation in the method of refrigerating and shipping oysters in shell is being conducted by a firm in New Zealand, which sent a trial shipment of frozen Foveaux Strait oysters to London, according to a report received from Trade Commissioner, Julian B. Foster, Wellington, New Zealand.

Although in the United States no work has been done in shipping frozen oysters in shell, it is not unusual, during the season, to ship fresh oysters in shell from Atlantic to Pacific coast cities for consumption. Shipments have also been made in shell from the Atlantic coast to European markets. These oysters are taken from the beds and shipped without being frozen.

Should the New Zealand shipment prove a success, a large market is believed to be assured in London, as it will then be possible to supply England with New Zealand oysters during the off season as well as in the months when oysters are plentiful there, as the almost inexhaustible beds in Foveaux Strait are south of the Equator.

Considerable progress has been made recently in the development of processes for freezing shucked oysters in the United States. The application by the oyster industry of the principles developed, it is believed, will gradually expand the market for oysters, as well as make it possible to hold oysters, taken when they are plentiful, for sale during the summer months when freshly caught stock is of inferior quality.—(Issued by the Department of Commerce.)

Louisiana Leads Nation in Sales of Natural Gas

LOUISIANA succeeded West Virginia in 1931 as the leading state in the export of natural gas. The interstate movement of Louisiana natural gas in that year according to a report issued recently by the bureau of mines, was 94,636,000,000 cubic feet. Texas was the chief purchaser of Louisiana gas. The total of Louisiana gas used in that state in 1931 was 41,520,000 cubic feet.

Consumption of Louisiana gas in other states was as follows: Arkansas 18,241,000,000 cubic feet; Alabama, 8,103,000,000 cubic feet; Tennessee 7,598,000,000 cubic feet; Illinois 7,553,000,000 cubic feet; Missouri 5,406,000,000 cubic feet; Georgia 4,904,000,000 cubic feet.

Mississippi sold 4,277,000,000 cubic feet of gas in Louisiana, 357,000,000 cubic feet in Florida and 355,000,000 cubic feet in Alabama.

Louisiana produced 224,155,000,000 cubic feet of gas in 1931. The average value of this gas at the well was 2.9 cents per 1,000 cubic feet. The average value at points of consumption was 16.8 cents per 1,000 cubic feet. Louisiana gas was burned by 137,000 domestic customers in 1931, who consumed 9,690,000 cubic feet. Domestic customers paid an average of 57.4 cents per 1,000 second feet for the gas they used.

Of the total production 11,806,000,000 cubic feet were consumed in the oil fields for drilling and pumping operations. A total of 52,205,000,000 cubic feet were used for the manufacture of carbon black. Petroleum refineries consumed 8,634,000,000 cubic feet. Public utility power plants consumed 18,612,000,000 cubic feet. Other industries consumed 31,040,000,000 cubic feet.

In 1931 Mississippi produced 6,048,000,000 cubic feet of natural gas. The estimated average value at the well was 4.1 cents. The average value at points of consumption was 24.1 per 1,000 cubic feet. A total of 24,000,000 cubic feet were used for domestic purposes. That portion of the output sold at an average of 57.9 per 1,000 cubic feet.

Mortgages and Forest Fires

THE progress of Louisiana's reforestation work is shown in many instances in various phases of business activities.

In the Florida Parishes, particularly in St. Tammany, Washington, Livingston and St. Helena Parishes, the banks and the landowners have recognized the feasibility and possibility of reforestation.

In scanning records of various parishes, mortgages are found in which the recipient of the loan agrees to the following clause in the mortgage:

> The said appearer mortgagor, binds and obligates himself that until the full payment of the amount of this mortgage, he will protect the land herein above described from grass fires, and will diligently practice forestry or tree growing on the unimproved portion of the said land.

The Division of Forestry believes that this is a very good step in the protection of the lands involved under mortgages and other loans. There is no question that the protection of these lands against forest fires protects the mortgage and that the lands will enhance in value during the term of the mortgage.

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Colonel Robert S. Maestri Rounds Out Third Year as Commissioner of Conservation

Outline of Work Accomplished During Present Administration

On December 1, 1932, Honorable Robert S. Maestri completed his third year as Commissioner of Conservation of the State of Louisiana.

A brief outline of Commissioner Maestri's Administration during said period follows:

The progress Louisiana is making through its work of conservation is due in a large measure to the intelligent cooperation of the public in all of the activities of the department. This attitude now manifests itself in all lines of conservation activity and is growing from year to year as the benefits of conservation become better known.

ACCOUNTING

Immediately upon taking office, the present incumbent, with the directors of the several divisions of this department, determined upon a policy of economy and retrenchment. An absolute necessity was found for conservation to be applied to the funds of the department as well as to the resources of the state—conserving the one and carrying out the constitutional and statutory provisions of law governing the other.

On July 1, 1931, the bank balance was $278,630.38. Report of E. A. Conway, Supervisor of Public Accounts, states that all vouchers issued during the period ending June 30, 1931, were examined as to their correctness and legality, adding:

> "And I was pleased to note that all disbursements were supported by good vouchers, and the accounts and records found in excellent shape."

A comparison of the financial condition of the Louisiana Department of Conservation under the former administration and under the present administration gives a graphic picture of the difference in business management:

FISCAL YEAR—1927-28

Administration— Appropriation	Former Commissioner Deficit
$225,000.00	$86.78

FISCAL YEAR—1928-29

Administration— Appropriation	Former Commissioner Surplus
$225,000.00	$1,091.85

FISCAL YEAR—1929-30

Administration— Appropriation	Former Commissioner Surplus
$150,000.00	$19,392.85

FISCAL YEAR—1930-31
(December-July, Seven Months Only)

Administration— Appropriation	Commissioner Maestri Surplus
$150,000.00	$220,387.83

FISCAL YEAR—1931-32

Administration— Appropriation	Commissioner Maestri Surplus and Bank Balance
$135,000.00	$278,630.38

EDUCATION

The year 1930 witnessed unusual activities in the Bureau of Education. Principal among them were the inauguration of a new and enlarged museum at 237 Royal Street, conveniently located near Canal Street in the heart of the business district of New Orleans, Louisiana; revision and publication of a number of popular and scientific bulletins previously issued by the Department of Conservation; and publication of a number of new bulletins, particularly adapted for juvenile reading and instruction, such as the "Bird Primer" and "Forestry Primer."

In connection with the museum, the Bureau maintains a well equipped auditorium with a seating capacity of approximately 500. Groups of children from various schools attend lectures daily and witness talking pictures relating to Louisiana's natural resources. A complete stock of Conservation literature is always kept on hand and distributed to the school children and the general public whenever they visit the museum, either to inspect the large assortment of specimens of wild life, fish, and mineral products of Louisiana, or to attend lectures and motion pictures.

In order to keep the public constantly reminded of the value of Louisiana's natural resources and the great industries which depend upon them, and to chronicle the activities of the Department of Conservation, the present administration inaugurated in October, 1930, a monthly publication (now a quarterly since July, 1932), known as the "Louisiana Conservation Review." This magazine is distributed free at the museum on Royal Street in New Orleans, and is mailed to a selected list of business and professional men, schools, libraries, public officials, and others upon request. It is gratifying to note this publication has met much favorable comment and daily the mailing list is being increased to meet requests of people from Louisiana and other states who desire to have the Review sent to them regularly.

A complete compilation of all Conservation laws enacted up to and including the regular session of the 1930 Legislature was accomplished for the first time. It not only clearly defines the law for the convenience of the Department, but will also be of interest and practical advantage to residents of the entire state.

Each Act has been revised and brought up to date. Amended Sections have been substituted (with proper memoranda of amending Acts) for the original Sections. They are, therefore, presented as complete and continuous units, and confusion and loss of time so often attendant upon the checking of Amendatory Acts is thus avoided. Co-related laws are conveniently grouped together with reference to the respective divisions they affect.

This work was compiled by James P. Guillot, L.L.B., Secretary of the Department of Conservation, and Nicole E. Simoneaux, L.L.B., Associate Editor of the "Louisiana Conservation Review."

CONSERVATION EXHIBITS AT FAIRS

The Bureau of Education, aside from carrying on its lecture work throughout a great number of schools of the State, has been interesting itself in carrying on its Educational Campaign at State and Parish Fairs. These fairs serve as an exceptional opportunity to present to the general public the scope and purpose of the Department of Conservation.

We, therefore, submit herewith a short report covering the past two years of the Department's efforts at these fairs and also at the Y. M. C. A. Camps, the Boy Scout Camps, the Camp Fire Girls' Camps. It is needless to say that these have proven excellent vehicles for bringing the value of conservation before the people, and thereby stimulating their interest in conservation work and the knowledge of the natural resources of their own state.

REPORT OF FAIRS AND CAMPS, 1930-1931

1930		
Oct. 25-Nov. 5	Louisiana State Fair	Shreveport, La.
Sep. 27-Oct. 5	South Louisiana State Fair	Donaldsonville, La.
Oct. 8-Oct. 14	Central Louisiana State Fair	Alexandria, La.
Oct. 18-Oct. 24	Natchitoches Parish Fair	Natchitoches, La.
June	Boy Scout Camp	Longleaf, La.
June	Y. M. C. A. Camp	Longleaf, La.
July	Y. M. C. A. Camp (Girls)	Pollock, La.
July	Y. M. C. A. Camp	Fishville, La.
July	Girl Scout Camp	Fishville, La.
August	Boy Scout Camp	Baton Rouge, La.
1931		
Oct. 26-Nov. 5	Louisiana State Fair	Shreveport, La.
Sep. 27-Oct. 5	Central Louisiana State Fair	Alexandria, La.
Oct. 18-Oct. 24	South Louisiana State Fair	Donaldsonville, La.
Oct. 8-Oct. 15	Natchitoches Parish Fair	Natchitoches, La.
Oct. 16-Oct. 19	St. Tammany Parish Fair	Covington, La.
Oct. 21-Oct. 24	Washington Parish Fair	Franklinton, La.
June	Boy Scout Camps	Pollock, La.
July	Boy Scout Camps	West Monroe, La.
July	Y. M. C. A. Camp (Girls)	Pollock, La.
July	Folk School	Delhi, La.

PUBLICATIONS

During the year 1931, this Department published a revised edition of Bulletin No. 18 entitled "The Fur Animals of Louisiana." There has been a wide demand for this bulletin by educational institutions and the fur trade.

This volume gives a history of the early fur trade of America and in Louisiana, with a review of the fur industry of today. It also discusses furs as a source of State revenue. Separate chapters are devoted to the following fur bearers: the Opossum, the Raccoon and the Ring-tailed Cat, the Mink, the Weasel, the Otter, the Skunk, the Little Spotted Skunk ("Civet Cat"), the Wild Cat, the Wolf, the Grey Fox, the Beaver and the Alligator.

Seven chapters are devoted to the muskrat with an exhaustive discussion of its life history in all phases of the muskrat industry and trapping methods. The last two chapters of the volume are devoted to the subject of Grading Fur pelts and Skinning, Curing and Shipping Furs.

A volume entitled "The Birds of Louisiana" was published for the first time by this Department in December, 1931, as Bulletin No. 20. This volume is profusely illustrated with many halftone cuts and a number of colored illustrations of Louisiana bird life.

In causing this book to be compiled, the Commissioner of Conservation has requested that as little scientific verbiage as possible be used, and it has therefore been written in a style that can be understood by all; and it is hoped that it will be widely read, especially in our schools; for, the teaching of a love for nature to our school children is bound to create a better citizenship.

The list of birds occurring within our state has been carefully checked and doubtful records have been omitted or included, to coincide with the records of the American Ornithologists' Union, and the records of the United States Biological Survey. This work, therefore, will be found to include a positive record of all birds taken within the state of Louisiana. The nomenclature is that of the American Ornithologists' Union.

PUBLICATIONS OF THE DEPARTMENT OF CONSERVATION ON HAND, DISTRIBUTED FREE OF CHARGE UPON REQUEST*

Bulletin No. 1. The Louisiana Oyster, 1916 (Revised, 1931).

Bulletin No. 13. A Brief Survey of the Natural Resources of Louisiana, 1930 (Revised, 1931).

Bulletin No. 14. The Clays of Louisiana (Shreveport Area), 1927.

Bulletin No. 15. The Trees of Louisiana and How to Know Them, 1928.

Bulletin No. 16. The Clays of Louisiana, (Monroe Area) 1928.

Bulletin No. 18. The Fur Animals of Louisiana, 1929 (Revised, 1931).

Bulletin No. 19. The Clays of Louisiana (Alexandria Area), 1929.

Bulletin No. 20. The Birds of Louisiana, 1931.

Bulletin No. 21. Sea Fishes and Sea Fishing in Louisiana, 1932.

Educational Pamphlet No. 1. Louisiana Timber Industry, 1931.

Educational Pamphlet No. 2. Louisiana Frog Industry, 1931.

Geological Bulletin No. 1. Geology of Iberia Parish, 1931.

Geological Bulletin No. 2. Foraminifera of the Jackson Eocene, 1932.

Louisiana Bird Primer, 1931.

Louisiana Forestry Primer, 1931.

List of Lectures on the Natural Resources of the State of Louisiana, 1931.

Outline of Work for Nature Guardian Supervisors, 1931.

Nature Guardian Hand-book, (for teachers) 1931.

Tenth Biennial Report of the Department of Conservation, 1930-1931, 1932.

Louisiana Conservation Review, official organ of the Department of Conservation, issued quarterly.

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* Owing to the size and expense of printing Bulletins Nos. 18, 20, and 21; Geological Bulletin No. 1; and the Tenth Biennial Report of the Department of Conservation, and Louisiana Nature Guardian Hand Book, free distribution cannot be made by mail. All persons wishing copies of these publications mailed to them should send twenty-five cents each in stamps or coin to cover the cost of mailing.

FISHERIES

A main activity of the Louisiana Conservation Department under the present administration has been centered on the development of Louisiana fisheries.

The outstanding project undertaken and made possible only through the present administration's program of economy, is the Northwest Louisiana Fish and Game Preserve. It is now practically completed and will represent an expenditure of $100,000.00. Construction has been completed on the following fish hatcheries and preserves: Bayou Des Allemands Fish Hatchery, Lake Bruen Fish Hatchery, Improved Lake St. John and Beechwood Hatcheries. Plans and specifications have been prepared for building Ouachita and Lake Bistineau Fish Preserves. A fish preserve has been created also in DeSoto Parish.

HATCHERIES

It is obviously a matter of much interest to the angler to learn exactly what State hatcheries are doing to insure continued good sport to the fisherman. Too often State jurisdiction over fishing comes to the fisherman's mind to mean only the collection of a license fee (and it should be remembered that in Louisiana this license fee, exacted for sport fishing and not imposed upon anglers using cane poles, is exceptionally small).

To make available to the angler the extent and evident success of the measures which the Department of Conservation is earnestly carrying out to insure continued good sport, the following brief statement is given, many of the facts of which may come as a surprise, even to the ardent fisherman.

The Department of Conservation of the State of Louisiana is maintaining in operation four fish hatcheries:

The Beechwood Hatchery at Forest Hill near Alexandria, La.

The Lake Bruen Hatchery at St. Joseph, La.

The Lake St. John Hatchery at Ferriday, La.

The Ouachita or James A. Noe Fish Hatchery at Junction of DeSiard and Black Bayous.

The Huey P. Long Hatchery at Lacombe, La.

In addition, the Lake Borgne Fish Preserve is maintained exclusively for sport fishing. Of greatest interest also is the remarkably designed and now accomplished project designated as the Northwest Fish and Game Preserve.

Additional to all of the above, special attention has also been given to the importance of Buffalo Fish and for the continued success of this fishery, a Buffalo hatchery at Des Allemands has been provided. Further mention of all of these projects will follow:

A total of 850,000 game fish, including Bass, Sunfishes, Crappies and "Perch" (Sunfishes), were, in 1930, distributed to applicants throughout Louisiana for planting in private lakes and ponds as well as in public streams. The Lake Bruen fish hatchery completed, in 1931, under the administration of Commissioner Robert S. Maestri, comprises fifty acres of land with four breeding ponds. A total of 200,000 Bass and 300,000 Sunfishes were produced and delivered in the season of 1932 from this hatchery, alone. The Beechwood hatchery, in the same year, gave a total of 450,000 Bass and 650,000 Sunfishes. The James A. Noe Fish Hatchery, which has been completed by the present Administration at a cost of $20,000.00, has a total hatchery area of 26 acres. The Bass pond, approximately 10 acres in extent, and the "Bream" pond, almost three acres in extent, are designed to furnish the most suitable depths for breeding purposes for these fishes. The construction is such that a maximum extent

(Continued on page 39)

Bruin goes a'fishing

Managing the Alaska Brown Bear

By B. F. HEINTZLEMAN

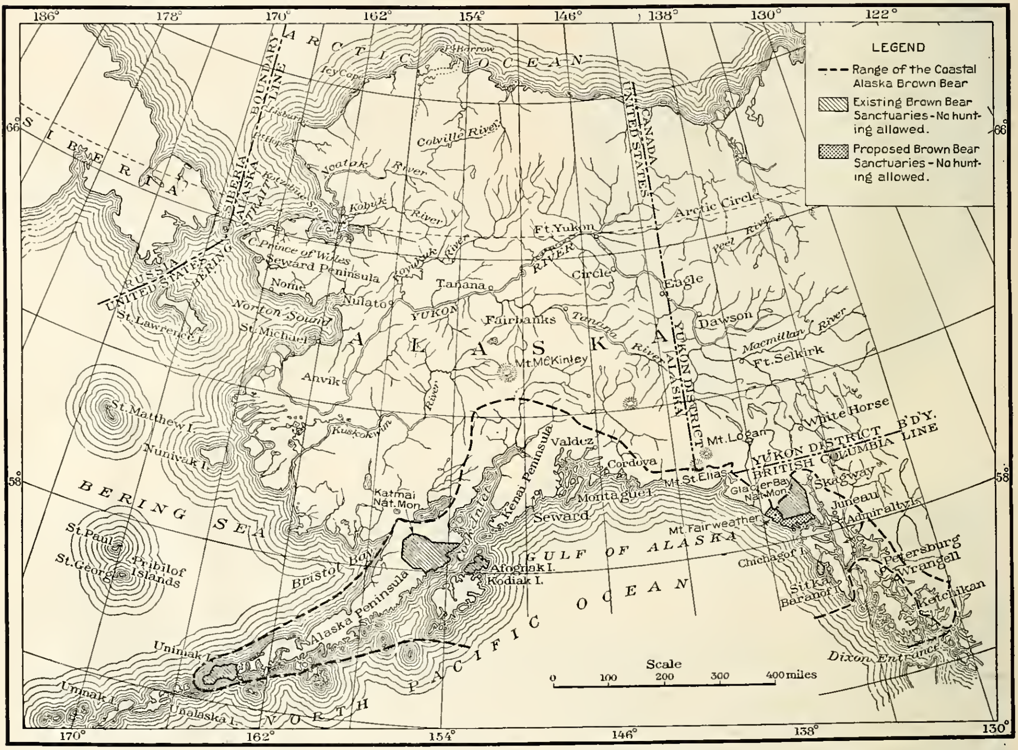
(Courtesy "American Forests," Washington, D. C.)

THE May issue of this magazine carried an earnest appeal from Stewart Edward White, the eminent outdoor sportsman and writer, for assistance in an effort to have the federal government set aside and dedicate Admiralty Island in southeastern Alaska as a bear preserve. This large island, free of all forms of commercial enterprise, and with hunting, trapping and fishing prohibited, Mr. White would hold in its wild state for all time exclusively as a home for the Alaska brown bear—a truly regal domain for the "King of the Woods," with only such humans tolerated as came to admire.

Mr. White's deep interest in this animal can be appreciated by one who has lived and worked in the brown bear country of Alaska for thirteen years. This bear is a magnificent specimen of wild life. All classes of bears have always had an exceptionally strong appeal to men and here we have the largest, the most majestic in mien, most courageous and intelligent and in all the most

This is an aerial shot of Lituya Bay, from a point over the Gulf of Alaska. The Great Fairweather Range crowns the head of the bay, with Mount Fairweather—15,300 feet high, just off to the left. Alaska brown, glacier and black bears are abundant here and this locality is part of the proposed additional bear sanctuary in Southeastern Alaska.

impressive of the entire bear family of the world. No one who has ever seen him going about the daily task of getting a living for himself, who has watched his highly amusing antics in his hours of play, or who has marveled at his courage, strength and vitality in a fight with other bears or with men, can help but carry away a great and lasting interest in the Alaska brown bear.



This map clearly shows the range of the coastal Alaskan Brown bear, its present sanctuary limitations and the proposed extension of this territory. These lands, the author says, constitute one of the most interesting areas in Alaska.

A strong sentimental interest in this form of wild life should be tempered, however, with a suitable regard for other features when bear protecting measures are under consideration. Action designed solely to protect the bear for observation and study meets the wishes of one group only and does not satisfy those who follow certain other forms of recreation, such as bear hunting. It also may be diametrically opposite to that desired by the great number of persons who wish to see the commercially valuable resources of the proposed preserve lands put to use to further the general development of the Territory and to provide a source of livelihood for the local people. The relative value or importance of each of these activities and resources in a given locality must be carefully weighed.

The federal officials who deal with game and other resources of the Territory believe it possible to harmonize all of the interests involved through a proper coordination in the use of the lands in the various sections of the bear range. Thus some particular localities can be devoted to best advantage to preserves or "wilderness areas," where the bear is afforded full protection. Other localities are best suited to regulated hunting as the sole or primary use of the lands. On a third class of areas, and this will include the greater part of the bear range, the conservative use or management of bear and other game will be carried on with other important activities, such as the growing and harvesting of timber crops. In still other sections, such as agricultural localities, the bear must be held in close check or even eliminated, but this class will always be too small to affect materially the bear population of the Territory.

The Alaska Game Commission, the Biological Survey, and the Forest Service, having studied the local situation, believe the logical place for Admiralty Island in the above scheme is with those areas on which game management, the growing of timber crops, and the utilization of other resources should be correlated. The withdrawal of the island as a bear preserve, with hunting and all other forms of land use prohibited, is considered unnecessary for the purpose of perpetuating the brown bear on the range as a whole, or even on this island alone, and highly undesirable in that it would make a permanent wilderness of a section of Alaska that holds out the most promise for industrial development.

Looking for a good fishing field—and he will find it, too, for the Alaska Brown bear is the canniest of salmon fishermen.

The Alaska brown bear is found along 1,500 miles of the southen coast of the Territory. Its range extends from southeastern Alaska north and west of Unimak Island in the Aleutian Archipelago and covers 96,000 square miles, an area twice the size of the State of Pennsylvania. The total population of whites and Indians within and adjacent to the range is not in excess of 32,000, and the great majority of these people live in towns, mining camps, and fishing centers, and are not engaged in occupations that take them into the wild areas where the bears occur, while the rugged topography, dense underbrush, and excessive rainfall of this region discourage casual trips to the woods. The number of local men coming in unpremeditated contact with the bear is exceedingly small over the range as a whole, and there are sections of coastline hundreds of miles in length that have practically no human inhabitants.

This is Reid Glacier. Designated as a bear sanctuary, this is one of the many tidewater glaciers of the Glacier Bay National Monument. It has good salmon spawning streams and a dense cover of brush and young trees.

Few Alaskans are bear hunters, as they prefer to hunt animals valuable for food or hides, and the sale of brown bear pelts is prohibited by the game laws. There is some killing by outdoor men, such as prospectors, that can be termed wanton, but the percentage of bear killers among Alaskans is not high. A recent check-up of the charge that Forest Service field men make a practice of killing bears uselessly showed that a force of twenty-two men who spend the greater part of each year in the woods killed a total of only twenty-eight brown and grizzly bears in the past eleven years, and some of this killing was done in self defense. The number of bear hunters from outside the Territory has been too small to account for much killing considering that the bag limit is but two animals a season.

All non-resident hunters are required to report their kills to the Alaska Game Commission and in addition the Commission seeks information of the same kind from resident hunters. Reports from both sources for the entire Territory show an average yearly kill in the past three years of 131 brown and grizzly bears. The records do not show what proportion of these were brown bear.

It is believed that the total yearly kill of brown bears by all classes of hunters and for all possible reasons from pure butchery to the taking of museum specimens is well below the yearly crop of cubs. Some old-time residents of Alaska claim that the bear population has been increasing for the past ten or fifteen years, and certain circumstances make this seem reasonable. The rigid enforcement of the law prohibiting the sale of bear pelts is the most important factor. Another is that the white population of outdoor men has materially decreased over the greater part of the bear range in this period, with the subsidence of the great mining excitements and the completion of construction work on the two railroads. The game of Alaska is under the supervision of the federal government. The game laws are enacted by Congress and enforced by the Secretary of Agriculture acting through the Alaska Game Commission. This body consists of four Alaskans serving without pay, and a federally appointed permanent executive officer who is a specialist in game administration. The Commission directs the work of the game wardens and makes recommendations to the Secretary for changes in the laws and regulations. The Biological Survey conducts studies of game problems and acts as technical adviser to the Secretary and the Commission.

The basic game laws leave ample leeway to make such changes in the protective measures as are found to be necessary to keep pace with changing conditions. New measures to strengthen protection are being put into effect almost every year and it is believed that they have been adequate to date. Within the past few months two additions to bear sanctuaries have been made and another is now being considered and is almost sure to be established before June 30 of this year. The Secretary has also approved a recent recommendation of the Commission which adds the whole of southeastern Alaska to the area wherein a resident of the Territory is limited to a kill of two brown or grizzly bears yearly.

The present restrictions on brown bear hunting can be summarized as follows: Within the natural range of the animal, 96,000 square miles, complete sanctuary is provided on four large and a number of small units totaling 8,500 square miles, an area almost as large as the State of New Jersey. Throughout the entire Territory non-resident hunters are limited to a season extending from September 1 to June 20 (over 5 months of which the bear is in hibernation), and to a yearly kill of two brown or grizzly bears. On one-half of the brown bear range, resident Alaskans are subject to the same hunting season and bag limits as non-residents, and on one-quarter more of the range to the same bag limit. The remaining quarter carries no prohibition against killing by residents.

The tract now proposed to be added to the sanctuary areas covers 1,800 square miles in southeastern Alaska. It is adjacent to Glacier Bay National Monument and extends past Cape Spencer to Cape Fairweather, about fifteen miles north of Lituya Bay. Certain parts of this tract, notably the sections on the east side of Glacier Bay and those around Lituya Bay, have a good concentration of bears, perhaps as many, area for area, as Admiralty Island. Lituya Bay has both Alaska brown and black bears and perhaps some specimens of the rare glacier bear as well.

This proposed addition, together with the adjacent National Monument, provides a sanctuary of 3,600 square miles. This is a larger unit than is advisable for a game sanctuary alone, but in this case other recreational features are of primary consideration. The Monument and surrounding proposed sanctuary lands constitute one of the most interesting areas in Alaska. It has many large tidewater glaciers discharging icebergs into the sea. Exposed rock formations, remains of interglacier forests and advancing vegetative cover in the vicinity of the receding ice, are attractions for the geologist and botanist. The imposing Fairweather range of mountains. topped by Mt. Fairweather with an elevation of 15,300 feet and having at least five other peaks over 10,000 feet, is located here. There are also

(*Continued on page 46*)

Life and Climate of Primeval Louisiana

By ROBERT GLENK
Curator Louisiana State Museum

GEOLOGY, of all the sciences, addresses itself most powerfully to man's imagination.

In a fascinating manner it has revealed the story of the earth. There were no human witnesses to the events which transpired, and such evidences as have been preserved have been buried under the mountains or in the sea and are only with difficulty procurable.

The progress of life, from its earliest appearance in lowly forms, has unquestionably been an unbroken one, although the long period of progression through which the world has passed staggers the imagination in the effort to comprehend it. And without taking into account the inconceivable amount of time involved in bringing about the numberless changes and the complex and circuitous course taken in the direction of advancement, the facts and evidences of such evolution are not understandable at all.

The vestiges of the plants and animals found in various strata deposited at the time in which they lived are the documents upon which are based the foundations of the story of the earth.

They are the actual links in the chain of evidence of conditions then existing, and represent the life of their day with just as much reality as does the life now about us.

The narrative, however, is of necessity incomplete and lacking in detail, as the records of the rocks are far from being perfect; so many chapters having been lost or else never written.

In reading the story of the past, the beginning is made with the last page and going backward as a Chinese book seems to us to be read, from the most recent to the very oldest chapters.

Characterized by the introduction and culmination of successively dominant classes of organisms, the history of the earth is divided into five great eras of time, and these eras and epoches are each marked by some special distinctive biological feature. These subdivisions of geological time are not measured in terms of years, for there is no unit of measurement which can accurately be applied in each case. A thousand years of geological time are but as yesterday of our life.

In this story of the earth, the area now occupied by Louisiana was once part of the Paleozoic land mass called "Llanoria."

This land mass, which was totally unlike the present continent in outline, existed for a long time but was submerged in a subsequent period and remained sea-bottom for ages upon ages.

Only a few closing chapters of the earth's history are recorded in Louisiana and these chapters were all written by water, the element which is now and ever has been the great factor in land making.

The Paleozoic era dawned on a world inhabited by invertebrates and lowly forms of animal life and, through gradual evolution, on closed oceans swarming with fish and continents, where hordes of slimy creatures disported themselves amid vaporous swamps and tangled jungles of gigantic mosses.

The figures on a Chinese vase are scarcely more unlike those that now exist in nature than were the animals that lived at this time on the earth.

Higher forms of life were not yet developed and the landscape was totally different from the present and utterly unlike any ever seen by man. No vestiges of this early era have come to light in this state, as they are too deeply buried under the surface to be found.

Towards the end of the Mesozoic Era, Louisiana comes again into the chronicle.

In this era the North American Continent was divided into two continents by an immense interior sea. The Gulf of Mexico extended as far North as Illinois, covering entirely the section now called Louisiana and Mississippi and parts of Arkansas, Oklahoma and Texas.

For a period of many millions of years, the Mississippi river and other continental drainage systems have been pouring down sediment into this gulf until now the sedimentary column in south Louisiana has reached a thickness of over 25,000 feet.

If we read these records correctly, the Paleozic land mass was depressed by this load of Mesozoic and Cenozoic sediments to twice the depth of the present Gulf of Mexico.

The equalizing pressure of this tremendous volume of sediments, brought down by the Mississippi river and assembled over such a long period of time, was the contributing factor in driving columns of rocksalt, presumably of Cretaceous age and underlying the sediments, to the surface and above the present sea level, up through the 25,000 feet of strata and giving rise to the salt domes among which are the remarkable islands called Avery's, Week's and Jefferson's Island and from which much of our rocksalt comes.

During the close of the Mesozoic era, Winnfield limestone was formed and much of the petroleum and natural gas in Louisiana is found in sand strata laid down during this time.

These formations reach the surface in only a few localities in Louisiana and the fossil remains are scanty. They include oyster-like shells of Gryphaea which abounded in great numbers in the shallow waters. Likewise ribbed oysters, many types of extinct mollusks, sea urchins and foraminifera, have left abundant evidence of their existence.

Gigantic dinosaurs, fish lizards and hosts of other species of reptiles inhabited the land surface and the sea, and lizard-like birds with teeth flew about in the air.

A luxuriant vegetation of ferns, cycads, palms and the ancestors of our common trees and flowering plants flourished in the warm and moist climate then prevailing at this latitude.

Early in cretaceous time, the oceans began to spread over the continents and the final transgression became one of the greatest floods of the geologic past and lasted for a long period.

A break in the rock system and a still greater dissimilarity in the record of the life system is noted in deposits of this period and of those immediately above them.

In fact, the change is so abrupt that it is very suggestive of the occurance of some gigantic catalysm in nature. Most likely the intervening records were lost.

Entire races of specialized forms of creatures vanished from the earth including the dinosaurs and dragon-like birds. Briefly, the reptilian dominance gave way and modern types of organisms were introduced or became prevalent and the present adjustment of the relations of the great classes and orders of plants and animals was established on the earth.

Following the close of the Mesozoic era and beginning with the Ceneozoic era, modern geological history had its beginning.

In the Eocene epoch, earliest of this era, Louisiana was still covered by seawater and the inhabitants at this time were huge fifty foot sharks, sawfishes, marine snakes or seaserpents and other marine monsters.

The Zeuglodon was one of the characteristic creatures of this age. It was far from being a whale but more like a whale than any other kind of animal. The head was small in comparison with the body but the bulk of the animal consisted of tail which was three-fourths of its entire length.

The formidable array of teeth adapted for seizing and cutting, shows that the animal was predatory and flesh eating. A profusion of these fossils are found.

Fishes were very abundant as were also the nautilus and squids and many species of small mollusks.

Birds, much like present day varieties existed and the buzzards, woodcock, quail, ibis and pelican were represented by their ancestral forms.

One astonishing feature of the tertiary period was the great variety and enormous size of the land mammals which came into being, far surpassing any that are now in existence.

Many kinds of elephants and giant sloth-like creatures were a most distintive feature of later tertiary landscapes.

Lots of the mammals had decided marsupial characters though otherwise resembling the familiar wolves, foxes, etc.

Likewise true opossums were numerous and herds of hog-like animals, hornless deer and ancient camels wandered over the land, while in forests lived the early ancestors of present day squirrels, hedgehogs and bats.

Insects were quite plentiful and impressions of enormous sized ancient roaches, dragon flies, spiders and scorpions are found imbedded in the rocks of the land deposited as evidence of their existence.

The vegetation consisted for the most part of genera familiar in the meadows and woodlands of today.

Trees were probably more abundant and varied than those of existing floras and were of the coastal and strand types.

From fossil remains found near Shreveport, Coushatta and other sites, were identified the walnut, oak, elm, ash, holly, magnolia, fig dogwood. Palms, cacti, pines, cypress and yews also existed.

The plains were carpeted with lush grasses on which the gigantic bison and wild horses freely grazed.

The climate was temperate or warmer than at present.

Low lands with shallow and shifting marginal waters, furnished ideal conditions for receiving and preserving vegetable debris of the nearby mainland, so that the lower tertiary formations now contain the very extensive deposits of lignite or brown coal found in Louisiana, Texas, and Arkansas.

These lignite seams are made up of the remains of forests and vegetation which grew in

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The Importance and Conduct of Hydrographic Studies in Louisiana in Relation to Commercial Fisheries

By JAMES NELSON GOWANLOCH
Chief Biologist, Bureau of Research, Department of Conservation

THE marine problems of Louisiana are probably, in many of their characteristics, unique. This is due to the unusual and complex character of the waters of the Gulf of Mexico. Long ago, that brilliant American scientist, Matthew Maury, stated: "The area of all the valleys which are drained by the rivers of Europe that empty into the Atlantic, of all the valleys that are drained by the rivers of Asia that empty into the Indian Ocean, of all the valleys that are drained by the rivers of Africa and Europe that empty into the Mediterranean, does not cover an extent of territory as great or as fertile as that included in the valleys drained by the American rivers alone which discharge themselves into this our central sea (the Gulf of Mexico)". If, for example, a single factor, the suspended materials borne seaward by the Mississippi River be considered, it will be found that within one year this river is estimated to deliver into the Gulf of Mexico four hundred and six and one quarter million tons of silt, figures perhaps best appreciated when it is realized that this astounding burden exceeds by seven and one-half times that yearly borne seaward by the Nile. It is obvious that this contribution, complex almost beyond belief, representing as it does the interaction of rainfall and stream flow with the immensely diversified structural components of the greater part of the North American Continent, must profoundly alter and, with its changing access variably affect, the character of the shallow coastal waters of the Gulf of Mexico.

As is elsewhere pointed out, the Bureau of Research of the Department of Conservation of Louisiana has entered upon an extensive long-period investigation of commercial shrimp. Sea shrimp form the basis of one of the great fisheries of the United States which in 1930 totaled over one hundred million pounds and was eighth in volume and fifth in value of all United States fisheries. This investigation is carried out in a cooperatve program with the Bureau of Fisheries of the Federal Government to which program the states of Georgia and Texas are also, to a lesser degree, contributing. The center of the shrimp industry lies in the Gulf of Mexico and the headquarters for this cooperative program are located in New Orleans. The Bureau of Research of the Department of Conservation undertook, as one part of its share in the investigation, the collection and preparation of the hydrographic data in the coastal waters of Louisiana, the richest shrimp area fished.

This paper is a brief statement of the purpose and conduct of this hydrographic work. The field work is being conducted by the use of a special research vessel of the United States Government assigned exclusively to this work, the "Black Mallard", a boat 57 feet long with 14½ foot beam and 4½ foot draft. As part of the cooperative program, the Department of Conservation rebuilt this boat and maintains her in operation. For the field program, Grand Isle has been made chief base because it is in turn the center of an unusually rich shrimp fishery. Located at the lower end of Barataria Bay, Grand Isle lies in a typical Gulf coast setting of turbid shallow bayous and broad shallow bays. Anyone familiar with hydrographic work along, for example, the New England coast will be astonished at the profound contrast which the Louisiana coastal areas afford. An example, Barataria Bay, may be given. This area of water, roughly about ten miles in length and about six miles in its greatest width, is in turn the center of an impressive network of lakes, bays and bayous that spread over some four hundred square miles. This is relatively a vast area and yet if the channel that forms the pass between the Barataria Bay and the open Gulf be excluded, nowhere in this maze of bays, lakes and bayous is there to be found a depth greater than seven feet.

The tides of the Gulf of Mexico are unusual and are as yet little understood. Instead of the double daily cycle characteristic of the Atlantic seaboard, there is in the Gulf of Mexico only a single daily rythm with the addition, however, at certain widely separated points of a second cycle. A single daily high and daily low appear to be the rule along the Louisiana coast. The change in tidal levels is slight, with a mean range of tide of 1.3 feet at Grand Isle.

But superimposed on the tidal changes is the influence of wind exaggerated by the presence of broad areas of shallow water. As a result, wind action may completely obliterate the normal tidal sequence. Still to be considered is the influence of Gulf currents and these likewise are not yet understood. There is a pronounced eastward current far out in the Gulf of Mexico between this current and the Louisiana coast there is a compensatory counter-current with a westward drift. These currents moving in contrary directions sometimes create spectacular tide rips and in the course of the Shrimp Investigations it has been possible to demonstrate again and again the juxtaposition of masses of water quite different in appearance, temperature and composition, yet so sharply delimited that if the vessel be placed transversely across the boundary, samples taken at one end of the ship will completely differ from samples taken at the other end of the boat.

It so happens that Louisiana's two most valuable marine resources—the oyster fishery which for the year 1931 amounted to a total of 1,425,000 bushels and the shrimp fishery which for the year 1931 showed for Louisiana a total catch of 37½ million pounds with a value of $1,314,000—are animals in whose life history the shallow coastal waters play the most significant part.

Some idea of the complex horizontal stratification often present may perhaps best be conveyed by citing an example. At a station off Southwest Pass (one of the mouths of the Mississippi River) June 15th, 1931, the surface water had a salinity of 9.6 parts per mille while at a depth of 2½ meters the salinity was 33.4. Here cold fresh river water flows out over warm Gulf water of high salinity and the speed, direction and extent of their intermixture is determined by factors which are themselves highly variable.

In the course of this hydrographic work it became desirable to establish one offshore station at a position 135 miles out in the Gulf of Mexico where temperatures and water chemistry were studied to a depth of 1200 feet. The salinity differences were within a narrow range being 36.1 parts per mille surface and 35.3 parts per mille 400 meters down. The temperature range was considerable being 25 degrees C, at surface and 11 degrees C. at 400 meters. The sea at this position has a depth of about 1000 fathoms.

The hydrographic work now in progress falls into several categories. First, the systematic study of samples taken at a series of carefully chosen stations representative of the range of conditions within the zone of the Louisiana coastal waters that is most significant for the fishing industry. These samples are taken in conjunction with biological sampling by shrimp trawl and by various types of plankton nets and thus their study is to be coordinated with the fauna present. All of these stations are occupied at intervals of about two weeks. The second is the conduct of a series of closely placed observations through a complete tidal cycle at a single station. Such work is carried out at a series of stations representing a cross section of coastal conditions from the inside waters to the open Gulf, the vessel moving directly from one station to the next at the completion of each 24 hour observation so that conditions under which these observations are made will be as similar as is practical. The third type is the gathering of preliminary hydrographic data at various points of Louisiana coast extending from the waters across the border of the state of Mississippi on the east to Timbalier Bay on the west. The fourth is the conduct of extensive hydrographic studies in association with the studies of the currents and movements of larval stages of commercial shrimp.

This work, for its successful application of the life history problem, requires the carrying out of a program of investigation into the reactions of the larval and other stages of shrimp under experimental and laboratory conditions. This program is planned for the immediate future.

In the study of water conditions, the water samples have been collected with a standard Greene-Bigelow equipment, water temperatures have been determined by the use of Negretti-Zambra reversing thermometers, salinities are determined by the standard Mohr method using an installation aboard the research vessel. This, has been shown by constant checks ashore to be satisfactorily accurate. Hydrogen-ion concentrations have been ascertained by indicator methods. Turbidities have been estimated with a platinum wire apparatus.

It is not the intention of the present paper to present the detailed date of these investigations since they will be appropritely published elsewhere. At present some 3,000 samples have been analyzed and it is hoped that as this work proceeds it will serve in time to fill some of the gaps in our knowledge of the extremely complex conditions of the Gulf of Mexico and adjacent inside waters and will further serve to provide quite practical information of fundamental value in understanding the distribution and welfare of such commercially important animals as the oyster and shrimp along the Louisiana Coasts.

It is becoming progressively more and more clear that even the most hardheaded conduct of

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Roosevelt Enlarges on Forestry Views

THE PRESIDENT IS FOREST MINDED, SAYS PACK

American Tree Association Head, Who Has Given Four Million Forestry Primers to Schools, Points to Deep Study Governor Has Given One of Country's Biggest Problems.

IN Franklin D. Roosevelt forestry has a keen advocate, a man who is "forestry minded," said Charles Lathrop Pack, president of the American Tree Association in a statement recently announcing the publication of the fortieth edition of "The Forestry Primer." This edition makes four million copies of this publication Mr. Pack has given to the schools of the United States.

"When Mr. Roosevelt comes into the White House," continued Mr. Pack, "the American people will have a Chief Executive who is an earnest advocate of forestry progress. He is forestry minded and his good work for forestry in the State of New York stamps him as a leader in getting things along this line done. In expanding the statement made in his speech of acceptance of the nomination the President-elect in a letter said:

"'As I indicated in my acceptance address, I believe that the care and enlargement of the forests of the Nation offer a promising and profitable field for the employment of idle men. In the State of New York we were able this year to give short-time employment to 10,000 men in our forest tree nurseries and in tree planting. They were recruited from the rolls of the needy unemployed. We have given work to several thousands more in forestry activities, such as trail and road building and similar improvements in the State Parks and State Forests. We have found that the work done in this way with emergency labor under competent direction is efficient and a sound expenditure of public funds. It is entirely out of the class of the ordinary "make jobs" devised to meet the unemployed emergency.

"'I think it will be sound economy for the Federal government to encourage similar activities in other states under a loan plan perhaps by the government coupled with direct assistance from the states.

"'In the vast national forests there is opportunity and need for a greatly increased program of improvement. This would give work to many thousands of men during the present emergency. One of the prime needs is for road and trail building for the fire protection and funds for this purpose would, in my judgment, be a wise expenditure to be classed as dividend-paying capital investments. There is also in these forests the opportunity for tree planting and improvement cuttings. When we have emerged from the present depression, we will be able to do such work as cheaply and effectively as it can be done now.

"'Apart from the present emergency I think we need a more definite and comprehensive national plan for protecting, conserving and enlarging our forest resources. This plan should have among its objectives more effective stabilization of the forest products industry. The excellent program adopted this year by the Society of American Foresters needs to be translated into more effective co-ordinated action by individual forest owners, the several states and the Nation. We need also, as I have said on other occasions, a soil survey of the entire nation and a national land-use program. This has an important bearing on reforestation, which must be jointly a State and Federal concern, but with more effective encouragement from the Federal government than it has received in the past.'

"A statement of this character," continued Mr. Pack, "shows conclusively that the question of forestry in its many phases has been given deep study by the President-elect. A survey to ascertain how many men might be employed to do serviceable work on State and National forests, providing all necessary funds were available, has just been completed by the Charles Lathrop Pack Forestry Foundation.

"The reports from the United States Forest Service, the Indian Forest Service and State Forestry Departments which have been received and compiled indicate that employment might be given for 20,500,000 man days which is equivalent to the employment of approximately 70,000 men for the period of one year, at an approximate cost of $52,000,000.

"The questionnaire shows that some 38,000 men could be employed for a year on state forest

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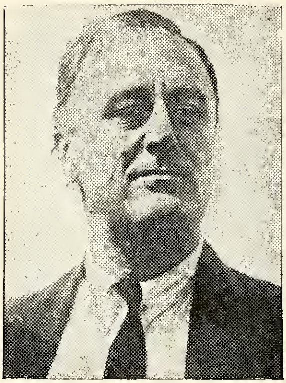
Common Sense For Uncle Sam To Take Care Of His Forest, Says Roosevelt - - -

From a speech made by Gov. Franklin D. Roosevelt during his campaign for election to the Presidency.

You and I know that in very many sections of Georgia, as in very many sections of New York and other States, this type of land has proved unproductive, and has either been abandoned as farms or is today being cultivated at a loss. That is why I am a believer just as much in country planning as I am in city planning. It is time for every one of the older states to survey their entire acreage for the purpose of determining the best future use of the land. In most of the states east of the Mississippi it will undoubtedly be determined that somewhere between ten and twenty per cent of existing farm acreage now used for agricultural crops should be abandoned as such and converted into use for tree crops.

Everyone knows that we are using up our American timber supply much faster than the annual growth of new timber. Therefore, unless we are willing to face a day not so far distant when we shall become a nation dependent on importing the greater part of our lumber from other nations we must take immediate steps greatly to increase our home supply.



President-Elect Franklin D. Roosevelt

It is common sense, and not fantasy to invest money in tree crops just as much as to grow annual agricultural crops. The return on the investment is just as certain in the case of growing trees as it is in the case of growing potatoes, or cotton, or wheat, or corn—and judging by present day fluctuations in the prices of agricultural crops in the tree crop is often a safer investment.

Because we are a young nation—because apparently limitless forests have stood at our door, we have declined up to now to think of the future. Other nations whose primeval forests were cut off a thousand years ago have been growing tree crops for many hundreds of years.

I am convinced that herein lies a fertile field, not only for the legitimate investment of capital, but also for the employment of labor.

There are, of course, a few who think of reforestation or the growing of tree crops as a process of setting out little seedling trees which have been grown in nurseries. Anybody who has advanced beyond the kindergarten stage knows better. Almost all practical commercial reforestation is in its origin an act of nature and not of man. The winds of heaven carry the seeds from trees that have already come to maturity, scatter them over the ground, and the warm earth and the rain and the sun do the rest. The use of the labor and man enters into the picture when it becomes necessary to eliminate the less valuable types of trees among the young growth, to cull out the crooked trees—the decayed trees or the undergrowing trees and to prevent ravages of fire in the growing forests. These are things which any beginner in agriculture or in forestry should know and, I may add, are things which my Secretary of Agriculture will know.

Let us remember the Federal Government owns hundreds of thousands of acres of so-called national forest along the chain of the Appalachian System. We all know that a large part of this national forest consists of second growth, third growth or fourth growth, cut-over land, which is now growing up, like Topsy, into a heterogeneous conglomeration of all kinds of trees—some good, some bad and some indifferent. We also know, as a practical matter, that unless something is done with this land the timber on it will have comparatively little value when it comes to maturity. It needs the aid of man to clear out the dead wood and encourage only the growth that will best serve the national need in the days to come. Is there any good reason, financial, common-sense, or otherwise, why the Federal Government should not undertake the proper care of its own property? Here again is another field for the employment of great numbers of our citiens.

An Agriculture-Forestry Committee conferred with me on the vital necessity of a national agricultural policy. Here are two short paragraphs from their report, which are worth hearing in every home in the land:

"The basic economic interests, agriculture which includes forestry, is prostrated, carrying with it the superstructure of finance and industry;

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New Service Provided by Minerals Division for Oil and Gas Operators - - - -

By ALBERT D. MILLER,
Paleontologist

THE following activities have been carried out recently in the unit of geology and paleontology. Palentological examination of well cores and cuttings, water analysis for oil fields, particularly to determine the amount of chloride and solids in the sample, analysis of all kinds of oils, gasolines, kerosene, tractor distillate and fuels to determine the specific gravity, open cup flash point, and distillation range. The Director of Minerals wishes the public to know that the services of the paleontological laboratories are available without any charge at any and all times on any of the above work.

As a result of a series of conferences with the Director of the Minerals Division, Dr. J. A. Shaw, the following tentative program is being put into effect and carried out. The greater percentage of the oil and gas operators in the State, particularly the independent operators, up to this date, have not been able to avail themselves of the services of a field paleontologist to examine the cores and cuttings from wells drilled in the State, with the object of determining the age of the formations penetrated and whether they occur normally in the geological section; that is, whether the structure being drilled is high, low, or normal, and whether the cores carry oil, gas or salt water or all three. As it is at times impossible to tell one formation from the other on the lithology of the cores or cutting taken, this information is of great value to the operator in determining the future courses to pursue in the continuation of the drilling of the well, particularly if available at the well when cores are taken. In the particular area now under observation, there is a great unconformity between the Midway Eocene and the Upper Cretaceous, and the bit may penetrate any strata varying in age from the Arkadelphia to the Annona. The lithology of these stratums penetrated are very similar and it is at times impossible to determine the age without recourse to the use of paleontology. The determination as to which stratum it is that underlies the Midway Eocene is greatly desired as any of the strata below the Arkadelphia may carry oil and gas or one or the other, and places the operator in a position to decide whether to use the core barrel and not take a chance in passing up any sand or other oil bearing formation or to use the bit and drill ahead for possible deeper production. Numerous requests have been made to the Department since the last of October and the first of the month for more work of this nature by the writer when several other locations in this area get down to the critical stage and coring becomes necessary to determine the location of the well geologically on the structure.

The samples so taken are carefully labeled, taken into the Shreveport office and a more exhaustive examination made of the samples to determine the age, the porosity, and to analyze them for any traces of oil, gas, or salt water. A report is written covering the above mentioned examinations and given to the operator from whose wells the samples came. The samples are then filed for reference and are available to the public ten days after the completion of the well. If the operator desires the information so obtained to be kept confidential, his request is complied with until the above mentioned time limit after completion.

There have also been several analyses made of mineral and earth samples sent into the office from various residents over the State and a written report forwarded to the senders of same.

During the past month, the writer has been sent down on drilling wells that are in virgin territory and has so far found shows of a degree warranting first hand information at the well, thus saving the operator the time lost in sending the samples into the office for determination, and enabling him to decide immediately the course thought best to pursue by him after considering the information that the cores give. This has apparently met with the hearty approval and cooperation of the operators whose wells were examined in the field and in the future this practice will be carried out to a larger extent, with the approval of the Commissioner, Mr. Robert S. Maestri, and the Director of the Minerals Division, Dr. J. A. Shaw. This is considered particularly valuable when a new field appears to be coming in and the formations are such that first hand information may to a great degree be responsible for the making of a well that, without it, would possibly pass up a pay sand or horizon that carries oil and yet not in such amounts that it would show up through the heavy drilling mud used when the drilling is in progress.

The wells that were visited and cores examined as a trial to this method are located in Sabine Parish, Converse Area. The writer was present at the coring of four of these wells when the driller noticed a change in formation at the approximate depth that the oil and gas bearing stratum was believed to be. Immediately on opening the core barrel sample of the core was taken, dried and washed and examined with binoculars and other apparatus and every effort made to determine the age of the stratum and whether it carried oil, gas or salt water.

From October 22 to the evening of November 18, the writer has spent sixteen days and most of the nights of those days at the various wells being drilled in the Converse Area. He was present at the coring and testing of the wells mentioned above and made examinations and analyses and determinations of all cores taken to determine the age, the possibility of the formations cored carrying oil, gas or salt water, and gave his opinion as to whether the wells be drilled deeper or cored deeper in order to obtain a closer check on probability of production.

This work was done as the result of requests from the operators to the Director of Minerals Division to have the writer present as each of the wells reached a critical stage in the drilling of same. The results of this work have been highly satisfactory to the operators and they have requested very urgently that the services of the writer be placed at their disposal as drilling continues on other wildcat wells in this and other areas.

If the Department is able to follow up this work in the future, it will be able to obtain correct data, which will be at the disposal of the public, giving them thereby information that has only been obtainable in the past through the major oil companies who maintain such a division.

ROOSEVELT ENLARGES ON FORESTRY VIEWS

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lands at a cost of approximately $30,000,000 and that 32,000 men could be employed on Federal and Indian forests for a period of a year at a cost of approximately $22,000,000.

"The figures are regarded as conservative. A study of the answers to separate questionnaires reveals that in many cases the replies have been based on plans already made, and not on the amount of work that could be done if the budget for doing it were sufficient. There is little doubt but that if the Governors of each state were to put up to each State Forester the proposition of the number of men who could be absorbed in useful work without budgetary restrictions, the totals as given in the digest would be nearly doubled.

"This survey does not include work that should be done on private lands. An estimate is that three times the totals as given here would be about the correct amount of man days in order to improve and satisfactorily protect forest lands in private ownership."

BARKING FISH

Amazement struck the Hampshire village of Cambridge, England, when a big fish in the shallows of the local stream began to bark like a dog. Ten men pulled it out with a loop of wire and three shots killed it. They think it was some straggler from the ocean deeps.

COMMON SENSE FOR UNCLE SAM TO TAKE CARE OF FORESTS

(*Continued from page 14*)

but far more than these is the destruction of human values—those human values which in reality are the spirit of America—the reason for the vision of its founders.

"Results are the expression of causes. When there is starvation of spirit and body in a land of abundant natural resources, a land of plenty, no further evidence is needed of failure of the powers entrusted with control of government."

During these weeks I have made it abundantly clear that I propose a national agricultural policy which will direct itself not only to the better use of our hundreds of millions of acres of every type of land in the United States, but also to the rehabilitation of that half of our population which is living on or directly concerned with the products of the soil.

Our object must be the rebuilding of the rural civilization of America. Our object must be all-inclusive—a constructive program attacking the enemy on every front.

OAK TREE 1,000 YEARS OLD

Residents of Alonville, France, recently marked the 1,000th anniversary of an oak tree. Simple, but impressive services were held. Nine men with extended arms can barely incircle the nine-foot trunk, in which are cut two chapels, one above the other, in which 40 children can stand. A stairway leads around the tree to the upper chapel.

Louisiana Department of Conservation Participates in International Conferences

The Department of Conservation of Louisiana actively participated in the important sessions of the 26th Convention of the International Association of Game, Fish and Conservation Commissioners and the 62nd Annual Meeting of the American Fisheries Society, held in Baltimore, September 19th to 23rd, last. J. B. Dauenhauer, Jr., Director of the Divisions of Enforcement and Fisheries, and James Nelson Gowanloch, Chief Biologist of the Bureau of Research, were the representatives of the Department of Conservation in attendance at these conferences.

Bringing together those concerned in the control, care and study of game and fish resources throughout the United States and Canada, these annual sessions have become occasions of highest interest and value as opportunities for the helpful discussion of conservation matters. The State authorities of Maryland and the municipal authorities of Baltimore left nothing undone that would contribute to the success of the meetings this year. Under the direction of the Honorable Swepson Earle, Conservation Commissioner of Maryland, and the Honorable E. Lee LeCompte, State Game Warden of Maryland, two instructive trips of inspection were made.

On Tuesday, September 20th, the members of the entire National Association traveled by motor car to the Gwynbrook State Game Farm, located twenty miles outside of Baltimore. Here an inspection was made of the thoroughly modern plant devoted to the rearing of Bobwhite and Pheasants. Remarkable success has been attained in the management of these birds and in the release of this game in hunting areas.

On Wednesday, September 21st, the Department of Conservation of Maryland and the City of Baltimore were the hosts to the joint membership of the International Association of Game, Fish and Conservation Commissioners and the American Fisheries Society when onboard the steamer "Latrobe" the delegates sailed from Baltimore to Annapolis and back. Especially interesting opportunities were afforded to observe typical Chesapeake Bay fisheries in operation, Bluefish fishing and Oyster tonging. The Convention steamer was convoyed by a fleet of patrol boats of the Maryland Department of Conservation, led by their new flagship, the "Saelmo," and an inspection was made of the Naval Academy and the State Capitol. On the return trip the Convention steamer passed the inbound U. S. S. Wyoming, back from her three months' training cruise.

Mornings, afternoons and evenings were all filled with sessions of the two associations. Wednesday night, September 21st, was marked by the joint annual dinner held at the Lord Baltimore Hotel at which Governor Albert C. Ritchie was one of the chief speakers. Remarking that Maryland was one of the original thirteen states, his Excellency declared that they had a high regard there for the original Constitution and expressed the hope that they would soon be observing the Constitution in a less amended form.

Carl D. Shoemaker, Secretary of the special committee on Wild Life Resources, gave an address and also presented the greetings of Senator Harry B. Hawes of Missouri, Chairman of that committee.

Seth Gordon of Washington, D. C., Secretary Treasurer of the American Fisheries Society and President of the American Game Association, gave a very able address in which he especially emphasized the economic value of preserving game resources and used as an example the value to the state in dollars and cents of Large-mouthed Black Bass when they are caught by sportsmen as compared with their value when caught as market fish. The difference was enormous since it has been conservatively estimated that the Black Bass, as a sports fish, is worth $5.00 a pound to the State, whereas its value as a market fish would be only 20c a pound at most.

The Honorable Hoyes Lloyd, Supervisor of Wild Life Protection of the Dominion of Canada, who has been especially distinguished for his work in the control and understanding of the breeding areas of wild ducks in Canada, delivered an outstanding address. Dr. Lloyd pointed out the overwhelming importance of cycles in game conservation and took occasion to commend highly a presentation of the subject of natural cycles which had been published by the Department of Conservation of Louisiana in the Louisiana Conservation Review. Dr. Lloyd showed that astronomers had most precisely predicted to him the rainfall of the current year over the duck areas and their predictions had been realized. He reported the improvement of breeding conditions in these areas of the prairie provinces of Canada and adjacent North Central States where the vast majority of all our important game ducks are hatched.

The sessions of the International Association of Game, Fish and Conservation Commissioners were held under the Chairmanship of the President, Wm. J. Tucker of Texas. The President elected for next year is Ross L. Leffler of Pennsylvania. Among the high points of the session of the International Association were papers on the present conditions affecting ducks and geese in Canada by the Honorable Hoyes Lloyd, with discussions by Commissioner Burnie Maurek of North Dakota, W. D. Stewart, Director of Fish and Game of Minnesota, and six other game commissioners of the central and northern states and of Canada. Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies of New York, gave an interesting address on "America's Rarest Birds." Dr. Pearson, who this year traveled to Louisiana to study the Ivory-billed Woodpeckers which the Department of Conservation recently discovered, referred particularly to the interest and importance of this find. Since the last Ivory-billed Woodpecker which had hitherto been seen was observed in 1924, the species was generally believed to have become completely extinct.

Talbott Denmead of Washington, D. C., addressed the Association on the subject of the Black Bass law and made clear the importance of conserving this finest of fresh water game fishes for sports purposes rather than sacrificing it for the market. The Black Bass law has been enforced in Louisiana and in this State we do not permit the sale of Black Bass in the market. It was therefore a surprise to the Louisiana delegates to discover this fine game fish offered on the market tables in Eastern cities side by side with Catfish.

The opening sessions of the American Fisheries Society were held on board the steamer "Latrobe" while cruising on Chesapeake Bay, the use of amplifiers making it possible to hear the voices of the speakers above the sound of the vessel's engines.

The papers presented before the Society this year were especially numerous and interesting, a total of almost sixty papers making up the program. Important studies on the Black Bass and other game fishes were described. At one of the evening sessions Dr. Herbert F. Prytherch of the Federal Bureau of Fisheries, gave an account of the extremely important results of his investigations into the life history of the oyster. The speaker illustrated his address with the most remarkable moving pictures that have ever been taken of oysters. Magnified many hundreds of times, the minute larvae of the oyster could be observed going through the complicated transformations of their early life. Especially notable, also, as a presentation of some of the latest developments in freezing methods for commercial food products, especially fishes and other sea foods. The speaker, Clarence Birdseye, the director of the Birdseye Biological Laboratories, Gloucester, Massachusetts, is the inventor of the Birdseye system for freezing food. Mr. Birdseye illustrated, with moving pictures, many of the applications of this freezing method and indicated that when the method becomes used for oysters it will not mean any reduction in available marketing possibilities for oysters, but, far otherwise, may actually consume an oyster production infinitely greater than exists at present. The possibilities of the application of such freezing methods to Louisiana's unparalleled oyster resources hold tremendous promise for the shellfish industries.

An able account of some of the results already secured in the shrimp investigations was presented by Milton J. Lindner, Acting-in-Charge of the Federal Shrimp Investigations in Louisiana.

Numerous studies on improved methods in the rearing and distribution of various species of sport fishes were recounted. James Nelson Gowanloch, Chief Biologist of the Bureau of Research of the Louisiana Department of Conservation, presented two papers before the Society, the first, "The Importance and Conduct of Hydrographic Studies in Louisiana in Relation to Commercial Fisheries," and the second, "The Practical Importance of Securing More Precise Statistics of the Shrimp Fishery." The first paper, which is printed elsewhere in this number of the Review, sets forth some of the unusual characteristics of marine problems in Louisiana and indicates the great necessity for extensive studies and their relation to commercial fisheries.

In the second paper the speaker described the practical importance of securing more precise statistics than are now availaple as a basis for the proper understanding and protection of the shrimp fishery. The methods by which these more precise returns will be secured were described and the highly practical value which they will afford was explained.

Besides participating in the sessional activities of these two groups of conferences, the dele-

(*Continued on page 45*)

Harvesting of Large Oyster Crop To Give Employment to 17,000

EMPLOYMENT will be provided for 17,000 men in harvesting $12,000,000 worth of oysters in the season started Sept. 1, according to a prediction by the Department of Commerce. An abundant crop of oysters of unusually high quality has been reported from producing centers.

Modern methods of food merchandising eventually will make oysters available the year around, it was suggested. The Department's statement follows in full text:

"About 17,000 men will be given employment before the close of the oyster season which opened Sept. 1, according to information received by Acting Commissioner Lewis Radcliffe of the Commerce Department's Bureau of Fisheries. This giant crew will be engaged in harvesting the $12,000,000 crop of this important seafood.

"According to Mr. Radcliffe, reports from principal producing centers indicate that there is an abundant supply of oysters of unusually high quality ready for the harvesting. In 1930 the latest year for which official data are available the production was in excess of 15,000,000 bushels.

"Speaking of the nutritive value of oysters, he pointed out that they have a high iodine content and are good sources of minerals, such as copper, iron and manganese, which, according to leading investigators, render oysters of value in the prevention and treatment of nutritional anemia.

"'In keeping pace with the modern trend of food merchandising,' said Mr. Radcliffe, 'more oysters are now being packed in trade marked sealed unit packages including glass containers, packed at points of production and safe-guarded in every way as to quality. With recent developments in the quick freezing of oysters, we may expect a gradual extension of the season of their availability beyond the "R" months to every month in the year. The ease with which oysters are digested and their nutritional properties commend them as an excellent warm weather food when science and industry have overcome past handicaps to year 'round distribution of fresh oysters.'

"About 6,000,000 pounds of canned oysters were packed during the 1931-1932 season, which is considered a large pack. The bulk of the oyster crop will come from along the Atlantic and Gulf coasts with a smaller quantity from the Pacific. On the basis of 1930 figures, the Chesapeake Bay district will lead other areas. In that year Virginia oystermen harvested 2,859,000 bushels and Maryland accounted for 2,300,000 bushels of oysters. Mississippi was ahead of Maryland with 2,500,000 bushels. New Jersey followed with 1,400,000 bushels with New York close behind with 1,300,000 bushels and Louisiana with 1,200,000 bushels.

"These figures are for market oysters only and do not include the valuable seed oysters cultivated in several States to replenish exhausted oyster beds.

"The opening of the oyster season has been celebrated for many years in England with elaborate ceremonies. The principal celebration in England is held annually at Colchester shortly after the opening of the season and is attended by members of the Royal family, ambassadors, premiers, famous soldiers and sailors.

"The great list on one of these occasions included the Right Honorable the Lord Mayor of London Sir Kynaston Studd, F.M., Sir G. F. Milne, G.B.C., G.C.M.B., D.S.O., D.C.L., L.LD. (Chief of the Imperial General Staff) and a large number of other notables. Another guest list included R. Atherton, a councillor of the United States Embassy, representing General Dawes, who was then ambassador to the court of St. James. At the same time, M. de Fleuiau, French Ambassador, attended as did Air Marshal Lord Marley, of the British Air Force, and the commander in chief of the air defense."

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Pass-a-la-Loutre! - -

By
E. B. COPE

Pass-a-la-Loutre Hunting Club

It was a beautiful day! The cool fresh breeze rushing into the automobile that was so speedily carrying me to Buras on the first lap of my journey to the famed Public Shooting Grounds of the State of Louisiana, swept into temporary oblivion the hope and prayer that had been uppermost in my mind since I had first planned this trip. It seemed futile to dwell upon desires for blustery weather from the Northwest with the slight but penetrating winter sun stealing into the car through the slightly lowered windows with comforting warmth. Blustery weather, rains, wind, and the Northwest were far away. Surely they could have no connection with the dancing, glancing sunshine of this early Southern winter.

Yet upon my arrival at Buras, with a picture of clean, smooth roads, well kept orange groves, and a gradually widening river vividly depicted in my mind, I took an early opportunity to cast an anxious eye Northwestward. A fair sky met me. Wonderful weather; ideal weather; for travelling, but not for duck hunting! And during the hour that intervened between our arrival at Buras and our departure on the launch "Ferol" for the remaining forty miles down the river to the club house of the Public Shooting Grounds, I alternately admired the ducks and geese that adorned the entire length of a power lugger drawn up alongside one of the wharfs fronting the river at this point, and scanned the sky for a first sign of favorable duck weather. The captain of the "Ferol" confirmed my fears that ducks were scarce by explaining that because of low tides and calm weather, the ducks had left the ponds inside the limits of the Public Shooting Grounds and had taken to the mud flats along the Gulf shore. This time hopes and prayers for a change of weather were not swept away by delightful breezes rushing through automobile windows!

About sunset, with the peaceful waters of the Mississippi River lapping gently against the sides of the "Ferol," we headed into Delesdernier's wharf at Pilot Town and I had a chance to see the surrounding country before the early winter twilight fell. Pilot Town itself proved to be a unique little village. It lies at the head of the passes leading from the Mississippi River to the Gulf of Mexico and serves as the changing place of the bar and river pilots that guide the great ships from the sea over the bar, up the river to safe anchorage at New Orleans, and back again to the sea.

Before I left New Orleans, I had glanced hastily at a map showing the river's many mouths, but this only half prepared me for the many and intricate water ways that have been formed during past centuries. Before me lay the battlefield upon which the "Old Father of Waters," carrying with his murky flood the drainage of the whole Mississippi Valley from Lake Itasca to the sea, has ever fought to push back the beautiful blue waters of the Gulf of Mexico. Ever failing in this fight, he has sulkily dropped his loads of silt on the bottom of the Gulf and in so doing has given to Louisiana a myriad of passes, or paths, from the Mississippi River to the Gulf of Mexico. It is on one

of the passes, Pass-a-la-Loutre (Otter Pass), some seven or eight miles below Pilot Town, that the Public Shooting Grounds of Louisiana, also known as the Pass-a-la-Loutre Club, owned and operated by the Louisiana State Department of Conservation, lies. Consisting of sixty-five thousand acres of marsh land that have been reclaimed from the Gulf by the "Old Father of Waters" in his age long struggle with the sea, this combination shooting preserve and wild life sanctuary has within its limits twelve carefully patrolled and fed duck ponds that cover a coast line of approximately eight or ten miles and abound in waterfowl of all kinds, as well as snipe, rabbits, and deer, a hunter's paradise!

When the "Ferol" reached the club house, after leaving Pilot Town, it was dark, and the winter night prevented a sure knowledge of the surroundings. However, even in the darkness I could see that the wharf was large enough to allow for the anchorage of visiting yachts and for the duck boats belonging to the club. A wide lighted walk led from the wharf to the club. Halfway between stood a duck house, used for the hanging, tagging, and packing of the daily kill of the sportsmen. The club itself is a one-story building, with a cupola or lookout tower on the roof. Resting on piling some six or eight feet in height, it stands approximately a hundred yards from the water's edge. Across the entire front, and along one side, runs a spacious screened porch. Directly behind this porch, and opening onto it, is the main dormitory, the manager's office and the dining room being next. A second dormitory runs along the left side of the building and the bath room is to the rear of this dormitory. To the right of the club house, and connected by a wide corridor, is the kitchen, while the electric light plant and large water tanks are in an outbuilding, directly behind the club. The confortable beds, hot and cold showers, the radio, and other modern conveniences, which were obviously recent improvements, were, I was told, the results of the careful planning and supervision of Commissioner Robert S. Maestri.

The club manager, Charlie Johnson, proved to be a tall, slender man, typical of the lower coast country, with a quiet, soft voice and a watchful, solicitous manner. The chef, as I found out during my stay, was an excellent one, possessing that certain art in cooking so necessary to the contentment and well-being of the out doorsman. Charlie explained to me that the guides, duck boats, and decoys were included in the daily fee and that shells of all guages might be secured at the club at city prices. All a hunter needed, therefore, was his gun, hunting clothes, and himself.

After a hearty supper, all turned in early. We were awakened at four o'clock in the morning for the hunt. While Charlie was pairing off all parties with their guides and equipping them for the hunt, I had a chance to give the Northwest another glance, though it was with a great deal of doubt. I realized that my doubts were well-founded when Charlie headed the little tow boat toward the Gulf, stating that better hunting could be had on the mud flats in the Gulf, as the ducks had left the inside ponds of the Public Shooting Grounds and gone seaward.

I managed somehow to be paired off with Charlie, but as I watched him row our boat slowly out of the bayou in which he had anchored the tow boat and head for the mud flats, I was glad, and I felt that I had with me one of the best hunters and guides in Southern Louisiana. Subsequent events proved that this was true.

The morning sun was just brightening the eastern sky as we reached the mud flats and I gave a gasp of surprise, exclaiming, "Gosh! Look at the ducks!"

"Yes, and look at that raft of geese!" was Charlie's calm rejoinder. "However, unless a breeze springs up we won't get much shooting."

He was right for as the boat was poled slowly over the flats, thousands of ducks of all varities rose from the water, flew a short distance, and alighted again, just out of range! Charlie watched this maneuver for a while and then decided to build a blind out on an open flat so that we would have water all around. He therefore moored the boat a hundred yards from an island of tall cane, secured sufficient canes with a few slashes of his knife and returning with them to the mud flat, he built a blind by sticking the canes in the soft mud close enough to effectively conceal us. He bent the tops down so as to cover the deck of the small boat, but not so low as to prevent our shooting over them. Here we waited for some time, watching patiently and helplessly while a convention of several thousand geese two hundred yards to the left and rear of us decoyed all of the ducks in the vicinity. Expert caller though Charlie proved to be, he could not effectively compete with the honking and chattering that came from the raft of geese. The sight was interesting but exasperating, for we realized that if we were to get any duck shooting, we must first get rid of the geese.

Muttering in vexation, Charlie swiftly changed his shells to larger shot and slid into the shallow water. He had no hope of getting a shot, for his tall form looming against the skyline was sufficient warning to the members of the goose meeting. However, his two ineffectual shots were sufficient to break up and scatter the geese. There was no further decoying of ducks by this group. By this time a light southwest breeze—it would be southwest in spite of all of my prayers—had sprung up and this, together with the tide that had risen, was moving the ducks toward the inland coves. Several handsome birds headed toward our decoys, but, evidently sensing something wrong, they veered off and disappeared upwind.

A lull followed. Suddenly I looked in the direction to which Charlie was pointing and hardly had time to focus my gun before a flock of hustling birds were swinging gracefully over our decoys and preparing to light. Making myself as small as possible behind the blind, I fired two shots from my Parker and thrilled to see two birds drop from the flock and fall to the water, gently rippling the surface. While reloading, I heard Charlie's long-barreled pump speak sharply and glanced up in time to see three teal hit the water.

"Not bad," he commented, "if we could get five out of every flock, it wouldn't take long to get the limit. Quick! Down! Here comes a long widgeon out in front; take him!"

But the widgeon came for the decoys only to swerve when almost out of range of the gun.

"Shoot," cried Charlie, "he must have seen us."

I did, and the widgeon struck the water with a splash, but only to turn over, shake himself, and swim for the grass. Two more shots aimed at him on the water only made him swim faster.

Squirming around disgustedly in the bottom of the boat, I glanced over my shoulder and saw three fine birds well overhead, long necks outstretched, warily watching our blind and our decoys. Charlie's eyes were already glued on them and I motioned for him to take them, as they were too high for my gun. There followed as pretty a bit of shooting as it has been my opportunity to see. This tall, slender man stood up in the boat and pointed his Winchester skyward. Twice it spoke and although the birds were almost out of range, two fell. One, a duck, crumpled like a deflated balloon and struck the water, a rumpled heap of feathers; its breast split wide open from the impact with the water, the distance of the fall had been so great. The other, a drake, slid sideways and fell nearly fifty yards further out. However, he was only winged and swam rapidly out of range. Determinedly Charlie pursued. He had almost reached the drake when a tidal gully filled his boots with water. Nevertheless, hurling the dead duck, that he had picked up, at the escaping drake and with a final spurt, handicapped though he was by his water-filled boots, he overhauled the victim and rang his neck, returning to the blind almost exhausted. Charlie found me behind the blind, doubled up with laughter.

Later during the morning, the ducks having disappeared, we started a hunt for the geese that had been scattered earlier, but this proved unsuccessful, for the geese had evidently left the vicinity.

I could have stayed on hunting indefinitely, but we noticed that the guns to the Northeast were gradually dying away and that the other members of the hunting party were heading toward the bayou and the tow boat anchored just inside. Our bag, though only containing thirteen mixed ducks, compared favorably with the others and everyone seemed well pleased.

We arrived at the club in time for lunch and after lunch boarded the "Ferol" for the return trip out Pass-a-la-Loutre into the river, past Pilot Town, and up the river to Buras. During this trip, someone told me of the daring feat of Admiral Semmes during Civil War days, and with the memory of the trick Charlie had played on the three fine ducks flying so smugly far over our decoys still fresh in my mind, I could well imagine the consternation that this plucky Admiral must have created among marine underwriters and ship owners of the North when he took the saucy little "Sumter" through Pass-a-la-Loutre, eluding the Federal cruisers stationed outside in the Gulf, and escaping the Federal ship "Brooklyn," to prey upon the enemy's shipping.

It was not until I had settled myself back comfortably in the automobile on the return trip from Buras to New Orleans that I remembered my mental conflict with the Northwest and my futile prayers for the blustery weather which it was to send. Just to even matters up a bit, I put my head out of the window of the car, turned my face toward the Northwest, and grimaced several times. The cool night wind smiled at the pleasure I derived from the childish prank. I laughed back. What cared I for blustery weather from the Northwest? Had I not found a country where duck hunting could be successful without the aid of duck weather at Pass-a-la-Loutre, the Public Shooting Grounds of Louisiana.

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IN MEMORIAM

John Dymond, Jr. - *Nationally Known Conservationist of Louisiana Passes On*

DEDICATED TO
JOHN DYMOND, JR.
President Delta Duck Club

I tak my gon and my paggaille
And go out to the pon.
I wan to shot dos dock
But my-cher dey hall gon.

Wal I no wat I gon do,
I will paggie hall aron
And kill some do puldou
He sho is fat and ron.

I put too shel in by gon
And lay him in de bot;
Now I gon have som fon,
I het I get his gote.

I see won swem behin a gras,
I paggie lik a rac,
He get up and fly so fas
She pas me on my fac.

I tak a haim, it mus be low;
Mon dau I mak it frad,
I neve shot lik dat befo,
My shel she got no laid.

Ah I see, to mus be pare,
One big one and a smal.
I gon snek on den my cher
I kno I get dem all.

She tern his head, he see me,
Lok rite in to my hie;
I cannot tell if she is he,
So I wate ontil dey fly.

Dey swem rite up to my bot,
Dog on it, I be dam;
Dos puldou she got my gote.
Dey hall mos pick my and.

I say por bird, yo don no me,
You sho mus he som green.
My cher how can dis be
It mus be hall a drem.

—R. E. SAUCIER.

In the death of John Dymond, Jr., on Saturday, November 12, 1932, Louisiana mourns the loss of a citizen who was active in the interest of conservation throughout his public career. Mr. Dymond was sixty-five years of age, and well known in legal and political circles of New Orleans and Plaquemines Parish.

A native of New York city, the son of the late State Senator Dymond, who served in the Louisiana Legislature for many years, and the late Mrs. Nancy Elizabeth Cassidy Dymond spent his early childhood in New York, moving to New Orleans when he was eleven years old.

Mr. Dymond was graduated from Tulane University in 1888, with a Bachelor of Art degree, and received his Bachelor of Laws from the same institution in 1890. He was married in 1893 to Miss Nita A. Shakespeare, daughter of the late Mayor Joseph A. Shakespeare, and a queen of Carnival.

JOHN DYMOND, JR.

Mr. Dymond began his legal career immediately after his graduation and at the time of his death was senior partner of the law firm of Dymond and Levy, in New Orleans.

Although Mr. Dymond had practiced law in New Orleans since 1891, maintaining an office here, as well as his home, he was, perhaps, fully as well known in Plaquemines Parish. As a lawyer he figured in a number of suits involving trapping interests and affecting residents of the parish and served a term in the lower house of the State Legislature from the parish from 1920 to 1924.

AIDS CONSERVATION WORK

Mr. Dymond gained a considerable reputation through his many activities in the interests of conservation of game and the establishment of game preserves. He was attorney at one time for the Oyster Commission of Louisiana, which was superseded by the Department of Conservation. Because of the connection, he became a recognized authority on conservation subjects and at one time compiled a treatise on the oyster of Louisiana.

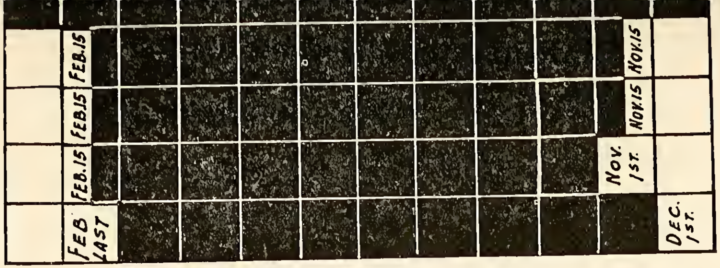
Mr. Dymond successfully represented the State of Louisiana in

(Continued on page 45)

Louisiana Fur, Game, and Fish Laws, 1932-1933

■ BLACK SQUARES DENOTE CLOSE SEASONS □ WHITE SQUARES DENOTE OPEN SEASONS
NUMBERS IN SQUARES ARE OPEN DATES

MIGRATORY GAME BIRDS	JAN.	FEB	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP	OCT.	NOV.	DEC.	BAG AND POSSESSION LIMITS
WILD DUCKS Except Wood Duck	JAN.15	■	■	■	■	■	■	■	■	■	NOV.16	□	15 daily, 30 in possession at one time.†
WILD GEESE	JAN.15	■	■	■	■	■	■	■	■	■	NOV.16	□	4 daily, 8 in possession at one time.†
COOT (POULE D'EAU)	JAN.15	■	■	■	■	■	■	■	■	■	NOV.16	□	25 daily, 300 season.
SNIPE	JAN.15	■	■	■	■	■	■	■	■	■	NOV.15	□	20 daily, 240 season.
DOVE	JAN. 31st	■	■	■	■	■	■	■	■	■	■	DEC. 1st.	25 daily, 300 season.
WOODCOCK	■	■	■	■	■	■	■	■	■	■	■	DEC.1 TO 31st.	4 daily, 22 season.
RAILS	JAN. 31st.	■	■	■	■	■	■	■	■	■	NOV.15	□	25 daily, 300 season.
GAILLINULES	JAN. 31st.	■	■	■	■	■	■	■	■	■	NOV.15	□	15 daily, 300 season.
SORA	JAN. 31st.	■	■	■	■	■	■	■	■	■	NOV.15	□	25 daily, 300 season.
RESIDENT GAME BIRDS													
BOB WHITE (Quail or Partridge)	□	FEB.15	■	■	■	■	■	■	■	■	NOV.15	□	15 daily, 120 season.
WILD TURKEY	■	■	■	■	■	■	■	■	■	■	■	■	Closed for 5 years.
GAME ANIMALS													
DEER	□	FEB.15	■	■	■	■	■	■	■	■	NOV.15	□	Bucks only. 1 daily, 5 season. Illegal to kill fawns or does.



BEAR	1 daily, 5 season.
SQUIRRELS	10 daily, 120 season.
RABBITS	No limit, may be sold in open season.
FUR ANIMALS Muskrat, Mink, Opossum, Otter, Raccoon, Wolf, Fox, Skunk, Etc.	Trap limit 250, traps must be visited daily.

HUNTER'S LICENSE PROVISIONS

LICENSE YEAR JULY 1 TO JUNE 30

HUNTING LICENSES:

Residents, hunting license	$ 1.00
Non-residents, four consecutive days' hunting license	$ 5.00
Non-residents, hunting license	$15.00

TRAPPING LICENSE:

Residents only, does not allow hunting, good only in Parish where trapping is done	$2.00

FISHING LAWS

FRESH WATER GAME FISH

KINDS	Size Limits	Creel Limits
BLACK BASS (green trout)	10 inches or more	20 daily
YELLOW BASS (striped bass)	7 inches or more	25 daily
WHITE BASS (barfish)	7 inches or more	25 daily
CRAPPIE (white perch, speckled perch, sac-a-lait)	7 inches or more	25 daily
SUNFISH (perch, bream, goggle-eye, blue-gill, etc.)	5 inches or more	100 daily

CLOSE SEASONS AND CLOSE ZONES

No state-wide close seasons on game or commercial fish. Department of Conservation can authorize close seasons or close zones in any waters where necessary, otherwise fish can be taken at any time or place provided size limits and other restrictions are observed.

ANGLER'S LICENSE PROVISIONS

LICENSE YEAR JANUARY 1 TO DECEMBER 31

Residents, per annum Required of all persons 15 years of age and over.	50c
Non-resident, per annum Required of all non-resident anglers fishing for fresh and salt water game fish, irrespective of tackle or bait used.	$2.00

ISSUED BY **DEPARTMENT OF CONSERVATION**

ROBT. S. MAESTRI, COMMISSIONER

NEW ORLEANS COURT BUILDING, NEW ORLEANS

TELEPHONES MAIN 1914-1915-1916

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†*NOTICE—Federal Bag Limit of 15 ducks and 4 geese daily must be observed.*

DOVE SEASON IN LOUISIANA—DECEMBER 1 THROUGH JANUARY 31—MUST BE OBSERVED AS ONLY OPEN SEASON.

Louisiana Nature Guardians

"Upon my honor, as a Louisiana Nature Guardian, I promise to take care of all our natural friends, to guard and protect them to the best of my ability, and as far as possible influence others to do the same."

ESTELLE VERJIE COTTMAN, *Editor*

WHEN the Nature Guardian Club of Louisiana was formed several years ago, it met an instant and hearty response from the teachers and the school children all over the State. From a small interested group it has grown steadily into a mighty force of thousands of young conservationists. These children are the proud possessors of handsome lithographed badges, and certificates of membership. New Clubs are being formed each week and it is the purpose of the Educational Bureau to enroll every Louisiana boy and girl, white or colored, under the Nature Guardian banner.

HOW YOU CAN BECOME A NATURE GUARDIAN
YOUR PART

Consult your teacher.

Ask that the purpose and plans of the Nature Guardian Club be explained to you and the class.

Ask for an application card.

Get a responsible person to indorse it, after proving that you fully understand the duties of a Nature Guardian.

Sign the application and mail the card postpaid, or give to your teacher, to send with cards from all the class.

OUR PART

We send the application card.

We send you a handsome badge, a certificate of membership, Nature Guardian pamphlets, and other literature.

This is all free, and is carried on with the purpose of instilling in the children's minds a knowledge of Louisiana's wild life and a thorough understanding of its economic value to the State.

It also aims to develop individual humanitarianism. Even within this short time an amazing improvement has been made in the mental attitude of our young folks toward the conservation and protection of Louisiana's natural resources.

EDITORIAL

My Dear Guardians:

I wonder if all you dear Nature Guardians realize half the beauty and wonder of your State!

A short time ago I was talking to a boy from Pennsylvania. He was proud of his state, and knew a great deal about its natural resources, particularly about the value of its coal and oil, and about their early histories. His enthusiasm over these was a splendid thing, and I found myself wishing that each child in Louisiana could give as fine account of our State as the Pennsylvania boy did of his.

The children of Louisiana should realize that the State has a host of the most beautiful birds in the world, both game and song; that her fur bearing animals furnish employment to thousands, and bring enormous sums of money into the State; that her mineral resources are unlimited; and that her fresh and salt waters produce countless myriads of specimens of valuable aquatic life.

Our Guardians should be deeply grateful that their lot is cast in a land of plenty, and they should study the natural resources seriously, and learn about their value and conservation. Then, when the occasion arises, they too will be able to express themselves about these matters with authority and conviction. Am I not right, Guardians?

With love and best wishes for a very bright and happy New Year for everybody,

Yours,

THE EDITOR.

Here is a little letter from Irene, with a pretty poem in it:

Crews, La., Oct. 13, 1932.

Dear Editor:

I am one of the Nature Guardian members. I am writing you a poem, and I hope that it will be published.

Yours truly,

IRENE CARTER.

THE BIRDS

On a sunny morning,
I saw birds on every limb.
They told me Spring had come
By singing their sweetest hymn.

Here is a letter and a poem from our faithful Guardian, Evelyn Denton:

Colfax, La.

Dear Editor:

I guess you think that I have forgotten my duty, but honestly, I still love wild life, and I am attending to my Nature Guardian duties. Here is a little poem I am sending for our column.

As ever your true Guardian,

EVELYN DENTON.

WHO MADE THE TREES?

The trees are so beautiful!
They are tall and straight with golden leaves
Twinkling in the sunlight.
Who made the trees so beautiful?
Why, God made the trees!
Who made the brook that flows so swiftly by
With trees planted by her side?
Their long, straight branches
Cover the stream with beauty.
Who made the lovely things like trees and brooks?
Why, God made them all!
We should love and care for them
Because God gave them to us!

Evelyn, this is a true conservation poem, and we are happy, indeed, to publish it.

Another little girl from St. Louis knocks at the door:

5826 Victoria Ave.,
St. Louis, Mo.
Oct. 12, 1932.

Dear Editor:

I want to thank you for the lovely magazine you have sent me monthly. I would like to join your Nature Guardian Club. I'll do my best to protect all natural things, so please make me a member of your Club.

Sincerely,

SARAH BALIN.

Come in, and welcome, Sarah. We know that you will make a faithful Guardian, and we want you to send us a story or a poem, sometime. And let me remind all the Guardians right here, that our magazine is now a **quarterly** and not a **monthly** publication.

This letter is from Luana, begging to enter our Club circle. Welcome, Luana. We are glad to have you with us.

Pride, La.
Oct. 17, 1932

Dear Nature Guardian Editor:

After reading the Conservation Review for October, I would like to become a member of the Louisiana Nature Guardian Club, promising to live the pledge to the best of my ability.

I was twelve years old on September 12th, and have entered high school. Please send me an application card.

Thanking you sincerely,

LUANA TOWNSEND.

THE RUBY-THROATED HUMMING BIRD

"Thou art a winged thought
Of tropical hours
With all the tropics rare blown splendor fraught;
Surcharged with beauty's indefinable powers,
Angel of flowers!"

It is interesting to learn that hummingbirds are only found in the Western Hemisphere, and that the only one species in Louisiana is the beautiful ruby-throat. This exquisite creature held Audubon's admiration, and Burroughs said that the "woods hold not another gem as the nest of a hummingbird."

The bird is called a **humming** bird, because its wings, in their rapid vibrations, make a humming noise. The flight is wonderfully swift, and the bird darts from flower to flower with startling rapidity.

These birds are quite long distance flyers, spending their winters in Central America, Panama, or perhaps Yucatan. The length of their flight varies from four hundred fifty to seven hundred fifty miles, according to their destinations. They gather along the Louisiana Coast in great numbers, and "take off" sometime in the afternoon, quite suddenly. Incredible as it may seem, daylight finds them in their winter homes, hunting for their breakfast. They return to us about March.

Claire and Ralph Prather, in "Nature Magazine" say that a half dollar will cover the top of the dainty nest, of which the female seems to be the sole architect. It is lovely in structure, beautifully made, and skillfully placed.

These authors say that the hummingbirds stake a claim during the breeding season, and bar other humming birds from the immediate locality, which must promise sufficient food for the family. The mother bird patrols her domain, driving off all intruders. The eggs are two in number, snow white, and as tiny as small peas. When hatched, the birds are very small, very helpless, and nearly naked, and look more like bugs than they do like birds. They are fed by the mother bird for three weeks after hatching. According to most authorities, the father seems to take all of his home duties very lightly. The birds are ready to start out for themselves when they are about seven weeks or two months old.

Hummingbirds are very brave though very quick tempered, and have been known to put crows and hawks to rout.

It was once thought that hummers lived almost exclusively on nectar, but now it is believed that the bulk of their diet is insects, among which are spiders, ants, bees, leafhoppers, and gnats. It is thought that very little vegetable food is taken.

The hummer is so interesting to watch, and his life history so full of attractive phases, that it will always be a favorite with the nature loving boy or girl.

BIRDS

(F. F. Gegenheimer, Gretna High School)

Birds are put in the sky so blue,
So they might cheer up me and you.
At break of day we hear the birds
Talking and chatting in their own words.
It is surely a pretty sight to spy
A mother bird teaching her young to fly.
Birds, like we, have their work to do;
They also have their troubles, too.
There's the meadow lark and the nightingale
Over us all at night they sail.
One of the best singers I ever heard
Is the pretty little mocking bird.
The pelican stands for Louisiana,
The eagle screams America's hosanna.
What does the sparrow and woodpecker do?
Why, they are put here to help us, too.
Every bird that is here on earth,
At some time or other can show its worth.
If any one throwing at a bird you might see,
Remind him that birds have life, like we.
Remember that all the birds living here,
Were put here to help and to give good cheer.

Here is another St. Louis letter, which speaks for itself:

4123 Toenges St.,
St. Louis, Mo.

Dear Nature Guardian Editor:

I find the Louisiana Conservation Review very interesting. I have not received the September issue. Will you please send it to me?

I want to join the Nature Guardian Club of Louisiana. I shall appreciate it if you will make me a member of your Club, and if you will send me all information regarding it.

Yours truly,

CONRAD TRAUTH.

We re glad to have Conrad as an honorary member, and hope he will always keep his oath of allegiance. Our magazine is now printed as a quarterly, not as a monthly.

Bethany, La.

Dear Editor:

I have your magazine, and I am very much interested in it. I would like to become a member of your Club. Please reply soon, as I am anxious to join.

Very truly,

ANICE STEPHENSON.

Come in, Anice, the door is wide open to a little girl like you!

Isn't it a fine thing, Guardians, when a whole family wants to join our Club? I am very much pleased to make the Roeder family honorary Club members.

528 E. Main St.,
Schuylkill Haven, Pa.

Dear Editor:

Would it be possible for my wife, daughter, and myself to become members of your Nature Guardian Club? We are interested in beautification, and in guarding of Nature's intimate friends.

Thanking you in advance,

Yours truly,

RAYMOND C. ROEDER.

THE RED-HEADED WOODPECKER

(Author Unknown)

I'm sure I've somewhere heard or read
That long ago there stood
All mossy and gray, a tiny house,
Beside a sheltering wood.

And there a woman, in sober gown,
And apron white as snow,
A little red cap upon her head,
Lived years upon years ago.

Little cared she for human weal,
And naught for human need;
To have and to hold for herself, the best
Was a part of her selfish creed.

And when to her cottage door there came
A beggar, wrinkled and gray,
She hid from his sight her dainty cakes,
And sent him empty away.

But as she watched him plodding on,
Conscience within her stirred.
"I'd give him all," she softly said,
"If I were but a bird."

No sooner said, than all at once
The feathers on her grew;
She changed into a little bird,
And up the chimney flew.

Her sober gown was feathers black,
As white as milk her breast,
The cap upon her old gray head
Became a blood-red crest.

And still within the wintry woods,
That bird today you'll see,
While cheerfully she pecks her food
From out some woodland tree.

Now, boys and girls, remember this,
And try to be kind and good,
When you see the woodpecker's party dress
And see her scarlet hood.

You may not be changed into a bird
Tho you live selfishly as you can,
But you will be changed to a smaller thing
A MEAN and SELFISH man.

We extend a hearty welcome to all of our new members, and hope they will become happy, useful, and faithful Guardians.

We shall be glad to hear from our members at any time, and shall be glad to print their poems, themes, and letters about any of the natural resources of Louisiana. We hope that our next issue will contain many interesting articles by members of our Club.

Address all letters to: NATURE GUARDIAN EDITOR, DEPARTMENT OF CONSERVATION, New Court Building, New Orleans, La.

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JUST FOLKS

By EDGAR A. GUEST

KING BIRD COURAGE

Every summer o'er fields I know
I watch the king bird chase a crow,
And the great black bulk with flipping wings
In terror flees from the tiny stings
Which his little brother, with braver heart,
Rises above him to impart.
"Go to it, midget!" I shout in glee,
"And sock him a couple of times for me!"

Now the crow is trouble. When he appears
Every little bird for her nest eggs fears.
He's a feathered bully and mean and sly
And mother birds tremble when he draws nigh,
For he robs their nests and he kills their young,
And I'm sure by none are his praises sung,
But the king bird, less than a tenth his size
Can chase him out of the summer skies.

Man, if you're worried or frightened sore
At the troubles you've had for a year or more;
If you think that your care is a dreadful thing,
And you stand afraid of what day may bring,
Don't sit and wail that you're out of luck.
All that you need in this world is pluck.
Just think, when your courage seems running low
What a king bird does to a monster crow.

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Service of Information to Aid Fur Industry

Foreign Developments and Market Data Collected by Bureau of Foreign and Domestic Commerce

By T. J. BIGGINS
Chief, Fur Section, Textiles Division, Bureau of Foreign and Domestic Commerce, Department of Commerce

IN THE last decade the volume of the fur-manufacturing industry of this country has approximately doubled. As stylists have learned to fashion fur apparel with the same deftness which has been achieved in cloth garments the appeal and the utility of fur has grown.

Although the style factor exercises a great influence in the demand for fur goods, the distinctive beauty and serviceability of fur, accentuated in recent years by advancements in designing, dressing and dyeing, have combined to give the material a firm place in the category of merchandise staples. Fashion's vogues may favor one kind of fur over another or perhaps temporarily disrupt the market for certain types of fur apparel; but generally the use of fur continues with more or less constancy.

As the use of fur has increased, particularly fur coats and fur trimmings, the activities of trappers and fur farmers and the importation of raw furs has correspondingly expanded. The increased tapping of these sources for raw furs has been reflected in the enhanced operations of fur manufacturers whose output in 1929 exceeded $277,000,000, or double the value 10 years previously.

Great strides have also been made in raising fur-bearing animals in captivity. especially the raising of silver and black foxes. At present practically all of these pelts used in the fur trade are from ranch-grown animals and there are also some mink, marten, rabbits and other animals raised in captivity which supply part of the trade's demands.

It is estimated that there are now some 3,000 fur farms in the United States and Alaska raising fur animals and that the investment in these enterprises aggregates approximately $30,000,000.

A large part of the undressed furs used in fashioning fur apparel by domestic fur manufacturers is imported and these comprise the bulk of all fur goods imported into the United States. As the fur-manufacturing industry has expanded the importations of furs has greatly increased.

From 1921 to 1929 imports have grown from approximately $40,000,000 to more than $122-000,000. In 1930, however, importations declined 45 per cent to $68,686,000, the decrease reflecting not only reduced quantities imported but also the lower prices which prevailed.

Although the United States imports a considerable part of the raw furs it requires for its industries, there is a fair export trade, particularly in furs in which this country has a plentiful supply, such as opossum, muskrat, and skunk. Fur exports reached nearly $40,000,000 in 1928, but have since declined, 1930 exports totaling $27,448,000.

It can be seen, therefore, that foreign trade exercises a great influence in the domestic fur industry and that a knowledge of conditions in foreign markets is necessary to the trade, not only for the procurement of needed pelts and skins but for the sale of those furs which foreign manufacturers might purchase from the United States.

Through the fur section of the Textiles Division the domestic fur industry is kept advised of foreign developments influencing the trade. The section studies foreign markets for furs, including undressed and dressed or dyed skins, fur garments, coats, neck pieces, trimmings, muffs, gloves, and hats.

American and foreign statistical data and market information are compiled. Monthly figures are furnished to the trade, showing by country the furs imported into and exported from the United States.

The section prepares special articles relating to the fur industry which are furnished to the press and the trade and issues from time to time trade information bulletins analyzing the international trade in furs. The section has made an extensive study of the consular invoices in the New York customhouse, and as a result the Department's import statistics now show by name practically all the kinds of furs imported. There was also conducted an investigation of the records of the state game commissions throughout the country to determine the number of animals caught and the value of the American fur catch.

Studies of the offerings at fur auctions in the United States and abroad over a period of years have been made by the section for the benefit of the trade. The section also relays information transmitted by its foreign offices regarding trade agreements, tariffs and any developments which are of interest to the American furrier.

Growing Tung Oil Industry for Louisiana, Mississippi Predicted by Specialists

(N. O. Times-Picayune)

RAPID development of the tung oil industry in the Southern United States, particularly in Louisiana, Mississippi and Florida, to supply a large existing demand in this country was predicted by tung oil production experts who arrived in New Orleans October 10th after a survey of Florida plantings.

Members of the party were Dr. H. A. Gardiner, director of scientific research for the National Paint and Varnish Association and vice-president of the American Tung Oil Corporation; C. C. Concannon, chief of the chemistry division of the United States department of commerce; H. J. Forbes of Hsum Hsai, Burma, a tung oil planter, and H. I. Haskins, general manager of the Benjamin Moore Paint and Varnish Company plant at Canteret, N. J.

The visitors were guests here of Lamont Rowlands of Picayune, Miss., and were entertained at Arnaud's restaurant.

The party left that day to inspect the 2000-acre tung tree plantings of the Great Southern Lumber Company at Bogalusa and then viewed the 9000 acres which Mr. Rowlands has in cultivation near Picayune.

Dr. Gardiner said certain land in Mississippi and in the Florida parishes of Louisiana is considered better adapted to the growth of tung trees than any other in this country, but that climatic conditions yet are to be proved. He added that the three-year-old trees of the Great Southern Lumber Company at Bogalusa have been "extremely satisfactory" in yield. The trees being grown by Mr. Rowlands are entering their second year.

Mr. Forbes emphasized that land must be selected carefully for the cultivation of tung trees. A planter cannot turn to the growing of tung trees just because he thinks it a profitable industry and because he thinks any land will be suitable, but he must search for the absolutely satisfactory land, he said. A native of England, Mr. Forbes has been in Burma for 14 years.

The United States, which uses large amounts of tung oil for a variety of purposes, largely in the manufacture of paints and varnish, in weather proofing of all kinds of articles and in the manufacture of automobile bodies, has imported all of its supply from Asia and the production in this country has been negligible, the visitors pointed out.

The demand here is so great and the oil which has been produced here is of such better quality, Mr. Concannon and Dr. Gardiner said, that the opportunities in this industry are tremendous.

However, with Mr. Haskins, they warned against speculative schemes to promote the industry.

"The only sound way to develop the industry is along the lines of careful planning and financing through the established institutions," said Dr. Gardiner.

"The investor," Mr. Concannon added, "should exercise care in investigating the organization, the motives, and stability of tung oil development financing ventures, so as not to encourage unsound methods which may shake public confidence in a promising infant industry."

Mr. Concannon discussed the progress made in Florida, where a mill already is operating under the supervision of Mr. Haskins to produce tung oil, and outlined the benefits which will accrue to other Gulf states through further development.

"The value of a permanent tung oil industry in the United States cannot be measured only in terms of the saving of millions of dollars now expended in China for supplies of this commodity," he said. "The significance to southern agriculture of rapidly expanding commercial acreage devoted to a crop for which there is a large existing market in the United States cannot be overlooked," said Concannon.

"As an agricultural activity, tung tree plantings promise to benefit all classes of people in the South—bankers, property owners, foresters, farmers, and laborers. Plantings represent a splendid contribution to the diversification of agriculture in this region and provide a profitable use for large tracts of waste and uncultivated land.

"The milling phase of this industry will directly add to industrial activity in the Gulf states and will indirectly stimulate interest in the location of paint and varnish and other consuming industries near supplies of one of their most pertinent raw materials."

Dr. Gardiner and Mr. Concannon make frequent visits over the territory to watch the progress of various plantings. Following their inspection at Picayune, they intend to return to the East.

Outlook for Forest Industries of Texas

Means for Expanding Timber Crop and Possibilities of Utilization of Products Discussed by Director of State Forest Service

By E. O. SIECKE
Director, Forest Service, State of Texas

VISITORS entering Texas from the West or North gain the impression that Texas is chiefly an agricultural and livestock State, with only scattering scrubby growth of oak, mesquite and cedar. Furthermore, many of our own citizens residing in the central and western portions of the State are so unfamiliar with our forests and forest industries as to consider them of only minor economic importance.

To find the commercial forests of Texas one must look into that part of the State lying east of the Palestine--Houston branch of the Missouri Pacific Railroad. There, forests form the western extremity of the southern pine belt that reaches from Texas to Delaware.

There are 35 Texas counties included in our commercial timber area, referred to locally as the "piney woods," covering more than 18,000,000 acres. This is an area larger than the combined areas of New Hampshire, Vermont, Massachusetts and Rhode Island. More than 10,000,000 acres of this area today carry forest growth, and most of it is considered as being chiefly valuable for timber growing.

Extending southward along the eastern border of Texas, from the Red River to the City of Houston, near the Gulf of Mexico, this timber belt during normal times produces annually more than 1,500,000,000 feet of pine and hardwood lumber and gives employment to some 23,000 persons each year; while the pole and tie timber removed annually adds another 500,000,000 board feet to the yearly production.

This production gives Texas a rank of sixth to eighth each year in the list of lumber producing states, and maintains an industry that employs more wage earners than any other manufacturing industry in the State. It is no small economic item.

Only 750,000 acres of old growth or virgin forests remain from the original area of approximately 14,000,000 acres, that once covered the commercial forest belt of east Texas. As the remainder of this vast area was gradually cut over, Nature took up her work of reforestation, and so we find that almost 3,500,000 acres are again covered with second growth pine and hardwoods of merchantable size and that almost 4,000,000 acres have gone back to pine and hardwoods below eight inches and not having obtained usable size.

Approximately 2,800,000 acres are covered with extremely young reproduction of pine or hardwoods, some of which is fairly well stocked, while other areas in this class are poorly stocked with young trees. On almost 2,000,000 acres there is no reproduction of valuable tree species; or, in other words, this area is waste and unproductive land except for the incidental grazing value.

The farmers in the commercial timber belt own approximately 8,000,000 acres of land, of which over 40 per cent is classed as second-growth timberland. The east Texas farmers own almost half of the area covered with second-growth timber of any appreciable size. The farmer is, therefore, vitally interested in the production of timber as a crop.

In east Texas, with most of the old-growth timber cut, it is not surprising that 70 per cent of our present merchantable stand consists of second-growth timber. In a few years the remaining virgin timber areas will be cut and then reliance must be had entirely upon the annual growth on the millions of acres in our second-growth stands.

Shortleaf and loblolly pine reproduces itself abundantly after cutting operations, and no great difficulties stand in the way of putting longleaf and shortleaf forests on a permanent yield basis. Adequate protection from fire and the practice of a few cultural operations, such as the killing of weed trees, advisable thinnings, etc., are all that is necessary to put timber-growing land of this type on a good productive basis.

Most of the area having no reproduction or scant reproduction is found in the longleaf pine type. Generally speaking, the land in the longleaf type is less valuable for agriculture than the soil in the other two forest types and, therefore, a greater per cent of the longleaf pine area is termed true forest land.

To bring back a fully-stocked stand on considerable land in the longleaf pine area, the planting of young trees must be resorted to and also the enclosure of planting areas with hog-proof fence or the elimination of the razor-back hog who loves the roots of the young longleaf pine trees. A number of lumber companies have started active reforestation work in the longleaf pine region and when times again become normal it is expected that projects of this kind will expand.

We have an immense growing stock of young pine and hardwoods in east Texas, and with increased development of the fire protection and forest management work, in cooperation with the timber owners and the federal government, together with advisable planting of young trees on barren areas, we will have enough timber growing to usable size to maintain a lumber industry of magnitude on a permanent basis and also enough timber to supply adequate material for new forest industries such as paper pulp plants, etc.

As a matter of fact, there are enough trees from four to six inches in diameter which should be removed from our forests in a thinning process to supply adequate pulp wood material for a pulp and paper industry comparable in size and value of products to the present lumber industry.

The United States Department of Agriculture and many agricultural economists outside of the Department are convinced that our land utilization status in the United States is unbalanced. We must take some of the land out of the agricultural field and transfer it to the grazing and timber growing field.

This movement is gaining force all over the country and cannot but speed up proper attention to the proposition of producing timber as a crop. Conclusions have been expressed that the need for timber in the future will decrease and that we might be making a serious economic error to unduly stimulate timber cropping.

While the per capita consumption of timber has decreased in the United States, it should be borne in mind that wood is the only structural material on earth that can be actually reproduced by man. Practically every other structural material is obtained from inorganic substances which are not restorable through human endeavor.

It is admitted that wood has been superseded in many lines of construction work, but at the same time many new uses for wood and wood fiber are being developed yearly. Well-qualified authorities predict that we are entering the era of cellulose, and in this connection it is likely that forests will produce more cellulose at less cost and in more compact form than can be produced by the use of any other vegetable fiber plant.

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Game Law Revisions for Season Reviewed

Establishment recently of the Mississippi State Game and Fish Commission leaves no State now without a game law enforcement agency, the Department of Agriculture stated Oct. 6 in a summary of recent changes in Federal and State game laws and regulations.

Enactment of a law which, in effect, makes a game sanctuary of the District of Columbia, amendment of the migratory-bird treaty regulations to lengthen the hunting season to 60 days and other less general changes in these regulations, and some revisions of State regulations on game hunting are described in the Department's statement. The Department's summary of Federal and State changes follows in full text:

An act of Congress approved July 14, 1932, makes it unlawful to hunt, pursue, or needlessly disturb any wild ducks, wild geese, or other waterfowl in any of the waters of the District of Columbia. This, in effect, converts the entire District into a game sanctuary.

Amendments to the Federal regulations under the Migratory Bird Treaty Act, approved and proclaimed by the President on July 20, 1932, provide for an open season on wild ducks, wild geese, brant, and coot (with some exceptions) of 60 days throughout the country. This action was taken following an investigation of the nesting and feeding conditions on the great breeding grounds of the North Central States and the Prairie Provinces of Canada, which disclosed a material improvement over the conditions that last season made it necessary to limit to one month the shooting of these species. Notwithstanding the general improvement noted, however, it was found that certain species had not increased in numbers to the extent others had. It therefore became necessary to close the season entirely on ruddy ducks and buffle-heads and to reduce the daily bag and possession limits on canvasbacks, redheads, greater and lesser scaup ducks, ring-necked ducks, shovellers, gadwalls, and blue-winged, green-winged, and cinnamon teals. At the same time it was found that eider ducks had increased in numbers sufficiently to justify an open season on them, with a limited bag.

A short open season, with a bag and possession limit of 10, was prescribed for band-tailed pigeons in New Mexico, Arizona, California, Oregon, and Washington.

The daily bag limit on mourning doves was reduced from 25 to 18. The new regulations make it illegal to shoot at mourning doves on or within 100 yards of any area where corn, wheat, or other grain, or salt, has been placed or scattered by a hunter, or with his knowledge, for the purpose of baiting or attracting doves.

The amended regulations provide that in the hunting of wild ducks not more than 25 live duck decoys may be shot over, and the restriction on the use of live goose decoys was removed, except in California, where the use of such decoys is not permitted.

The provision that shooting may not commence until 12 o'clock noon on the opening day of the season, was continued in effect for all species of migratory game birds except woodcock, mourning doves, and band-tailed pigeons.

Other Federal amendments concerned the importation of game birds from foreign countires and the taking of specimens for scientific purposes.

Since the publication of the Department's last game-law summary (Farmers' Bulletin 1684), regular legislative sessions have been held in nine States, and special sessions have been called in several others. Few changes affecting the game laws were enacted, the outstanding one being Mississippi's adoption of a new game and fish code and creation of a State Game and Fish Commission of three members, vested with plenary powers in game-conservation matters. There are now no States without a State game-law enforcement agency.

An act of the Louisiana Legislature closes the season on wild turkeys for five years.

In other States changes were effected by commission orders or regulations, the most notable being Wisconsin's opening a season on bobwhite quail for the first time in the present century. This is more in the nature of an experiment, however, the season lasting but three days in two counties only, there being no open season on bobwhites in other parts of the State.

Pennsylvania closed the season on 15 counties on turkeys, quail, pheasants, and ruffed grouse, and prescribed a uniform season on these species throughout the rest of the State.

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STATE HIGHWAYS TO BE BEAUTIFIED BY UNEMPLOYED

LOUISIANA will undertake a highway beautification program this winter using the unemployed for the labor and hopes to start a system of state parks, according to A. P. Tugwell, chairman of the Louisiana Highway commission.

The highway chairman said the commission planned using one man for each of the 2,500 miles of concrete or asphaltic surface treatment highway now completed or under construction.

The work will prove profitable to the state from a financial standpoint, as well as from the aesthetic, Mr. Tugwell believes, pointing out the savings to the state in having the shoulders properly sodded.

Mr. Tugwell said that present plans called for the using of one unemployed man for each of the 2,500 miles of concrete or asphaltic surface treatment highway now built or under construction and that he believed the work would prove not only worthwhile from the aesthetic viewpoint but that in the long run the state will profit financially.

The projects have been approved by the Louisiana unemployment relief committee, which is in charge of disbursing the unemployment relief funds in Louisiana. The more detailed plans of the work are now being prepared by the existing highway commission employes.

The unemployment funds, borrowed by the state for giving relief this winter, will be repaid the federal government from the state's highway federal aid allotments, and for that reason the highway commission is to be supplied with the labor it requests first, leaving the remainder of the labor to the parishes and the municipalities, the requests of the parishes to be served ahead of the cities and towns.

Mr. Tugwell said a competent landscaping engineer will be engaged by the highway commission for each of the six maintenance districts and that the necessary tools and supervision will be supplied by the highway commission. The foremen on the individual units and the workers will come from the lists of the unemployed certified as needing assistance.

The ultimate success of the plan, it is emphasized by Mr. Tugwell, will depend to a large measure upon the continued co-operation of the American Legion, which has been leading in highway beautification in the state and of various highway beautification and park associations and upon the public in general.

The state plans to use local plants and trees for the beautification of the highways, and, except in extreme instances, no shrub or tree will be purchased.

The first work will be the restoration of the shoulders along the concrete highways and the sodding of the restored shoulders to prevent further erosion, Mr. Tugwell explained. After this is done the rights-of-way will be cleared to the property lines of all objectionable debris and vegetation which does not set into the landscaping scheme. The shoulders will all be carried to uniform grade.

Park sites of 20 acres each will be sought at an average distance of 25 miles from each other. The state in no case will purchase these sites, but will depend upon their being donated. The sites which are donated will be cleared as much as necessary and development started, the chairman explained. This phase of the work, however, is not expected to be completed for a period of 10 years or more. The highway chairman's plan would call for about 100 state parks along the main line roads of the state. Sites along bayous, rivers or lakes would be preferable in most instances.

To accomplish the road work, the state's hard-surfaced highway system will be laid off into sections of 10 miles each and over each section will be placed a foreman engaged from the unemployed group. The foreman will be permitted to work six days a week and it will be his duty to supervise the other nine men assigned to work on the section. The foreman, Mr. Tugwell explained, will have to work himself as well as see that the others work. He will receive $2.50 a day, the same as the other laborers, and will receive his extra compensation as foreman only by being permitted to work six days instead of a maximum of four which other unemployed may work. All assignments for work must be made through the unemployment relief agencies.

The road section foremen will work directly under the parish placement directors and their work will be supervised by the district maintenance superintendents.

The highway commission's plan calls for the continual use of 2,500 men. If the workers average three days a week, this will provide employment for 5,000 different men in the state. All the men will be kept as near their homes as possible to keep transportation costs down.

Some of the women workers may also be used by the highway commission, it was explained by Mr. Tugwell. It is necessary that the property owners furnish the trees and shrubs by donations and, it is pointed out by Mr. Tugwell, the unemployed women can make arrangements for securing these donations. In some instances, these women may be able to get some extra shrubs from the residents of the city, but the most of the planting materials will be obtained from the woodlands where they grow wild.

The extent of the development depends largely upon public co-operation and upon the time the unemployment relief funds remain available, the highway chairman said.

Bird Destruction of Insect Foes of Plant Life

By GID GRAHAM

Chairman, Game and Fish Commission, State of Oklahoma

If we can ever get men to realize the tremendous worth of birds—what a great factor they are in agriculture and the lives of men—thousands would extend a helping hand to save.

Man has killed the birds and now insects destroy his crops, orchards, gardens and trees to the value of billions of dollars annually! Insects are increasing alarmingly as their natural enemies, the birds, are destroyed. Many species of insects eat during the day, but a large number are nocturnal and feed only at night.

Some families of birds take insects that prey on vegetation near the ground—turkeys, prairie chickens, quail, meadow lark and robin. Other birds, woodpeckers and flickers, prey on insects attacking the trunks and limbs of trees. Many other birds eat insects that prey on the foliage of trees—martins, swallows and sparrow. The whippoorwill and numerous families of bats destroy insects that prey at night only. Many flying insects that prey during the night are taken by birds in the air.

So. Dakota to Make Lakes Out of Breadlines

South Dakota has started a movement to convert breadlines into lakes for the benefit of agriculture, wild-fowl and recreation through the use of funds of the Reconstruction Finance Corporation, according to plans announced recently by the American Game Association. Governor Warren E. Green, the South Dakota Game and Fish Commission, and the Governor's Relief Committee are searching out development projects in connection with the game commission's water conservation program, that can be started at once.

"Exclusive of the cost of land, it is estimated that approximately 90% of the entire cost of the projects of this nature represents labor and 10% material," the game commission reported to Governor Green. "Since no skilled labor is required and in view of the further fact that much of the work can be performed with horse power and ordinary farm equipment, it places the relief offered within the reach of all." The Relief Committee has sent out questionnaires to receive applications for impounding water, and, upon these, it will apply to the Reconstruction Finance Corporation for sufficient funds to build the projtcts at once, thus bringing about relief among the destitute and unemployed before winter comes.

Both South and North Dakota, which also is suffering from a lack of water, will start a water restoration campaign with a "Dam It Week," September 24-30, according to announcement. Izaak Walton League Chapters, American Legion Posts and field men of the American Game Association are assisting in the water restoration campaigns of both states.

The unprecedented drought of the last three years has reduced both surface and underground water in these states to a dangerous extent. Experiments have shown that creation of new water surfaces and restoring old lakes raises the underground water tables, so necessary to agriculture. Lakes will be converted into nuclei for nesting grounds for wildfowl.

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DISCOVERIES MADE BY EXPLORERS AT BOTTOM OF SEA DESCRIBED

Huge Canyons, Gold, Mineral Water Geyser and Submerged Volcano Found

By LIEUT. COMDR. R. R. LUKENS
Chief, Coast Pilot Section, Coast and Geodetic Survey, Department of Commerce

TO THE oceanographer and hydrographic engineer, the sea and its mysteries are extremely interesting and the floor of the ocean appeals to them as a great field for exploration. The bottom of the sea is the one place left that no one has ever seen—unless we except the biblical story of the children of Israel crossing the Red Sea—but still the hydrographic surveyer by taking accurate soundings and bringing up specimens of the bottom can produce a rather accurate map of it and give us considerable information concerning it. Some queer things have been found by officers of the Coast and Geodetic Survey in their 115 years of surveying our coastal waters.

There is the remarkable submerged canyon of the Hudson which lies about 50 miles at sea off the entrance of New York harbor. If you take a chart of this section of the coast you can easily trace, by the deeper soundings, what geologists tell us was undoubtedly the course of the Hudson River millions and millions of years ago before the eastern seaboard subsided and brought the shoreline to its present location at Sandy Hook and Coney Island.

After following this ancient submerged valley for about 50 miles from Sandy Hook, we come upon a canyon which approaches the Grand Canyon of the Colorado in magnitude. Soundings show that the canyon at one place is more than 2,400 feet deep and about 3 miles wide from rim to rim. This grand gorge extends for about 20 miles until it spreads out fanlike and merges with the bottom of the sea. What grand scenery this canyon would make, but there seems to be no hope that any of us will ever get to see it.

The canyon and old river valley serve one useful purpose, however, in that they form underwater landmarks for vessels equipped with echo-sounding apparatus. In the case of a vessel bound from the Delaware Capes to Boston in foggy weather, the soundings tell the navigator when he is crossing this gorge and by referring to his chart, he can spot his position with entire confidence.

When Ponce de Leon was sailing along the Florida coast in search of the fountain of youth, he unknowingly sailed right by such a fountain two and one-half miles offshore and nine miles south of the old City of St. Augustine. Here we have the unusual feature of an oceanic spring sending up millions of gallons of fresh mineral water from the sea bottom at a general depth of 55 feet. The bubbling up of this water produces a marked effect on the surface and it can be seen for a distance of one mile. A strong odor, quite similar to the sulphur springs of Florida, can be detected under favorable conditions when two miles away.

The water comes up with considerable force and creates such swirls that the officer who investigated it reported that it was very difficult to hold a boat over the spring. If the outlet of this spring were on land it is possible that it would resemble a geyser more than a spring. The spring emerges from a hole only about 25 feet in diameter and 125 feet deep, or 70 feet below the surrounding ocean bed.

Not to be outdone by Florida, California boasts of oil springs adjacent to her southern coasts. One of these is in the southern part of Santa Monica Bay near Redondo, and is located near the head of a deep submarine valley. The oil comes up from a depth of 75 fathoms with sand and green mud bottom and covers a considerable area.

Years ago when there was great rivalry between Redondo and San Pedro as to where a harbor should be built, Redondo used the oil spring as an argument in its favor, claiming that the oil produced by the spring would form a "slick" and in time of storm tend to keep the harbor entrance smooth. Apparently the Government engineers were not impressed, for the harbor was built at San Pedro, and is now known as Los Angeles Harbor. The oil spring was known to mariners many years before the oil prospector appeared on the scene and brought in the great oil fields that today exist in this vicinity.

Another oil spring occurs in the Santa Barbara Channel a short distance west of the City of Santa Barbara. Here the smell of petroleum was so strong that the adjacent point was named "Coal Oil Point." Professor Davidson, who made the early surveys, stated that the smell of petroleum was almost overpowering and penetrated every part of a steamer which required about ten minutes to run through the coal-oil laden atmosphere.

You perhaps know that besides giving the depths of the water, the nautical chart shows the character of the bottom. Thus in looking over a chart will be seen abbreviations for mud, rock, sand shells, etc., which indicate the kind of bottom in that vicinity. While the survey is being made the sounding lead is armed, as we call it, with tallow and after the sounding is made and the wire reeled in, the lead is examined to see what it has brought up.

At one place in Alaska, the chart shows gold dust as a bottom characteristic. This occurs about 18 miles southeast of Juneau in Stephens Passage and at a depth of some 600 feet. Many prospectors have looked with greed at this indication of gold, but no one has ever yet devised a machine for dredging at such a great depth.

A curious feature of the waters of Alaska is the pinnacle rock. These lurking dangers often extend to within a few feet of the surface and have been the cause of many a ship wreck. The menace of these pinnacles was so great that the main ship channels of southeastern Alaska have been swept by the wire drag and the pinnacles thus discovered are now charted.

One remarkable pinnacle was found which rose from a general depth of 600 feet to within 17 feet of the surface. This pinnacle is higher than the Washington Monument, and, in fact, has been called the "Washington Monument Rock." It is fortunate that it was discovered by the wire drage before some unlucky ship struck it. In 1929 a large passenger vessel in western Alaska struck a charted pinnacle rock and went down in about 7½ minutes. Only quick work in launching the lifeboats averted a great loss of life.

In addition to her many high and spectacular volcanoes on land, Alaska has the very strange phenomenon of a submarine volcano. This is known as Bogoslof and is located in Bering Sea about 60 miles west of the village of Unalaska, and some 25 miles north of Umnak Island. It is out of the line of traffic and is only visited by an occasional cutter on patrol duty.

Bogoslof rises up from depths of nearly 6,000 feet. It throws up islands and then blasts them away with terrific explosions. Nearly every year there are great differences in the appearance of the island. It is so seldom visited that no doubt many eruptions have gone unrecorded, but we know that great convulsions occurred in 1796, 1883, 1906 and 1910. The eruption of 1910 was witnessed by the officers of the "Tahoma," who reported a column of steam and ashes many thousand of feet high. Of recent years great changes in the topography of Bogoslof have been reported, but no violent eruptions have been recorded.

Now and then we read stories of great changes in the ocean bed, islands disappear, rocks are shoved up and changes are reported in depths. Except for such localities as Bogoslof and where rivers discharge their load of silt and sand into the sea, the Coast and Geodetic Survey has selrom found any evidence of these changes.

One notable exception, however, occurred in the Sulu Sea in the Philippine Islands. In 1914 this area was surveyed by the Coast and Geodetic Survey using standard methods of hydrography. A bank or shoal was found which was about two miles long and some half mile wide. This bank was carefully sounded over with closely spaced lines; depths of 8 to 10 fathoms with sand and coral bottom were found over the crest of the ridge.

Two years later, the surveying vessel under my command was instructed to do some supplementary sounding in this region and in doing so, I ran a sounding line over this previously surveyed bank. We picked up the north end of the band and our soundings agreed perfectly with the old work.

Suddenly when nearly half way over the bank, the Filipino leadsman sang out "Twenty fathoms and no bottom." I thought the man had suddenly lost his mind, for I did not see how such a depth could possibly exist. I stopped the ship and took a cast with the sounding machine, and sure enough the depth was 32 fathoms; and this at the point where the previous survey showed 10 fathoms. We went ahead and resurveyed the bank and found that while both ends were the same, the central part had sunk and that there now existed a 30-fathom channel between the two ends.

The two surveys were of equal accuracy and neither could be questioned, so that we could only assume that the central part of the bank had sunk or caved in to the extent of 20 fathoms or 120 feet. No such vertical movement on land has ever been known even at the epicenter of the most violent earthquakes. What caused the subsidence, nobody knows. The records show that in the interim between surveys a severe earthquake had occurred in the vicinity and it may have been the cause, but there is no proof. This is the only case in which the Coast and Geodetic Survey has undisputed proof of a major change in the sea bottom.

The deepest sounding ever made in any ocean was had in 1927 by the German cruiser "Emden" at a point about 45 miles east of the Island of Mindanao in what has long been known as the "Mindanao Deep." The depth here was found to be 35,400 feet, or 6.7 statute miles. This spot is only 75 miles from a mountain 6,027 feet high so we have here a difference of elevation of over 41,000 feet, which is 12,000 feet greater than the height of Mt. Everest, the highest mountain in the world.

The German vessel used echo sounding in determining the depth, but wire soundings have been made in depths of over 30,000 feet. Many people have the impression that, due to the enormous pressure, a weight will not sink to the great depths of the ocean. This is not the case. A cast iron shot on the end of a piano wire, such as is used in deep sea sounding, will continue to go down until the bottom is reached. Due to the friction of the wire passing through the water, however, the wire pays out very slowly and it is difficult to tell the instant when the shot has reached bottom.

Once the shot strikes bottom it is detached and the rod only is hauled back. A specimen of the bottom brought back in the hollow rod is proof that bottom was actually reached.

The Coast and Geodetic Survey is frequently called upon to search for what often proves to be phantom rocks Lenard Rock in the North Pacific was such a case.

Many years ago this rock was reported by sea otter hunters, who claimed they had actually made fast their bidarkas to it. Later the captain of a trading schooner reported that he had lain becalmed in plain sight of the rock which was in the path of vessels bound from Seattle to Bering Sea.

If this rock really existed, it was a danger of the first magnitude, and every effort was made to verify the reports. Commercial vessels looked for it in clear weather, Government vessels were always on the alert for it and the Coast and Geodetic Survey spent several seasons making systematic surveys in the locality. Lenard Rock was never found, and the evidence against its existence seemed to strong that it was taken off the charts.

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Game Protectors to Restore All Wanted Wildlife

There is a transition from mere conservation to actual restoration of desirable wild life making itself more evident daily, according to a recent bulletin issued by the American Game Association. The old political fence-building game warden is being replaced by game and fish protectors. Today, the Protector is planting bird foods in the fence corners of the farmers instead of strengthening the boss' political fence with him.

Connecticut, one of the pioneer states in game and fish conservation, has changed the title of its forces from 'warden' to 'Fish and Game Protectors.' And their duties have been enlarged.

"Adoption of the title Fish and Game Protectors is prompted by the change in duties of these officers," Commissioner Charles F. Griffin, of the Connecticut State Board of Fisheries and Game, said. "Formerly their activities were confined principally to fish and game law enforcement. Now they are devoting much of their time also to control of predatory species which prey upon beneficial insectivorous and song birds and other wild life as well as protecting natural resources of the state in which the public generally is interested. They now engage in water pollution inspection, planting of food for birds, distribution of fish and game and many other duties. They are no longer solely game wardens in the sense that they are concerned only with game or with law enforcement."

Several of the other states have succeeded in reducing politics to the irreducible minimum in their fish and game departments by having them under the control of non-partisan boards or commissions composed of non-salaried sportsmen; other states are attempting to do so.

In a number of states game and fish officers are now being selected by open competitive examination, and their retention in the service is entirely dependent upon demonstrated efficiency. This eliminates much destructive political horseplay.

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NEW ORLEANS, LA.

COLONEL ROBERT S. MAESTRI ROUNDS OUT THIRD YEAR AS COMMISSIONER OF CONSERVATION

(*Continued from page 4*)

of shoreline is available and as a result, best breeding conditions for the young fishes can be assured.

Mention of the method of distribution utilized by the Department of Conservation State hatcheries may be of interest. Deliveries from the hatcheries are made during the fall and winter, as fish are spawned in the early spring and the fry can not be transported for any distance during the warm weather, as the water must be kept 50 degrees F. to insure safe delivery. The method of transportation is by truck. The fish are transferred into large milk cans, then put on trucks and the constant movement aerates the water to such a degree as to make deliveries safe. This method of delivery has proven very successful to the Department.

The Lake Borgne Fish Preserve is of exceptional interest since it sets aside exclusively for the purpose of sport fishing an extraordinarily rich salt water area that is within easy motoring distance of the city of New Orleans. No commercial fishing of any sort is permitted within the confines of this area.

The Buffalo fish hatchery at Lake Des Allemands provides a sufficient supply of fresh water in this section for the spawning of Buffalo Fish. The Department constructed at its own expense a siphon on the Mississippi River at Edgard. The siphoning of fresh water into this lake creates an ideal breeding ground for these species of fish and eliminates the serious decrease of certain earlier years when, through natural conditions, fresh water could not get into the lake.

The special character and unusual importance of the Northwest Fish and Game Preserve is such that the writer here quotes the description by Engineer Frank H. Waddill, published in the Tenth Biennial Report of the Department of Conservation, "Of the many splendid accomplishments of the Maestri Administration of the Department of Conservation, none stands out more boldly, nor appeals more strongly to nature lovers, than his successful creation of the Northwest Louisiana Fish and Game Preserve, out of Black, Clear, and Saline Lakes, in the Parishes of Natchitoches and Winn. Most men are by instinct, or heredity, *coureur de bois,* hunters and Fisherman—some for profit—all for pleasure, so the creation of a hunting and fishing preserve of twenty-three square miles in extent is a thing to be applauded in the highest.

"Black, Clear, and Saline Lakes, a little northeast of Natchitoches and west of Winnfield, have always been the hunter's and fisherman's paradise. It is probable that Juchereau de St. Denis, that *Beau-ideal* of French Colonial tradition, founder of Natchitoches, the first white settlement in Louisiana, stalked the deer and called the turkey to gun range in these bottoms.

"These lakes are now called lakes by courtesy, for they are lakes only in periods of high water. In the first part of the last century they were permanent lakes—made so by the backing up of the water by the great raft of logs in Red River. But the raft was removed, between 1833 and 1849, by Captain Henry Miller Shreve, founder of Shreveport, and the lakes drained out.

"During all the years since the lake waters disappeared, hunters have hunted deer and ducks in the bottoms, and dreamt dreams of a great preserve.

"The success of Cane River as a fish preserve, crystallized thought. Leaders arose, determined to realize this dream.

"Conspicuous among them were B. W. Bailey of Winnfield; J. W. Gaar of Dodson, formerly representative in the Legislature; Senator Lester H. Hughes of Natchitoches; former Senator O. K. Allen, now Governor of Louisiana, of Winnfield; Representative C. B. McClung of Natchitoches; P. S. Cloutier of Campti; J. W. Payne, Sheriff, of Natchitoches; James P. Guillot of Cloutierville, now Secretary of the Department of Conservation; and Huey P. Long, who needs no introduction.

"Act No. 191 of 1926, fathered by J. W. Gaar, created the preserve. This law did not supply sufficient funds, so nothing was done.

"During the Long Administration, Senator Hughes and Representative McClung put through Act No. 69 of 1928, amending Act No. 191 of 1926 and providing sufficient funds, the universal lubricant for all machinery—the solvent of all difficulties—to do any and all things necessary to create, establish, and put in practical operation, the preserve.

"Commissioner Maestri took up the project enthusiastically, had surveys made during 1930, and since then, has made every effort to acquire all lands to be covered by water. All state lands, therein, are, by statute, dedicated to the preserve. Mr. Maestri has taken the position that said lands have no real value except for what minerals they contain. Yet the owners must pay taxes. By donating the lands to the Commission, owners are relieved of taxes, and yet retain their mineral rights. Most of the owners have accepted these terms.

"When so much of lake bottom had been acquired as to make certain the success of the project, plans for a spillway-dam were prepared, and on the 24th of September, 1931, a contract was let to the lowest bidder, Fuller Construction Company, the same company which has built great concrete canals for the City of New Orleans, and the airport seawall for the Orleans Levee Board.

"The design adopted was a hollow, reinforced concrete spillway-dam, a type which, for low levels, is comparatively cheap and exceptionally safe and stable.

"Its height is twenty-two feet six inches, and length two hundred and ten feet. It will cost about $35,000.00.

"Work began on the 4th of October, 1931, and progressed rapidly, due to exceptionally dry weather.

"Heavy rains and a very high flood in Red River stopped work on the 16th of December, 1931, but is expected to be resumed soon, and the job completed by June 1st of this year.

"There are those who pretend to believe that the incomplete dam caused the water to back up during the recent flood. However, gauge readings, both above and below the dam, prove that the dam had no appreciable effect on the high water level in the lakes. That is to say, that the water would have risen just as high and stayed there just as long, if the dam had not been there.

"In other words, while the dam will hold the water at a minimum constant level, yet its capacity to discharge flood waters over the crest and through the four large sluices will be greater than the stream capacity to take it off into Red River.

"There will be twenty-three square miles or 15,720 acres of water surface, having a combined length of, say, twenty-three miles and an average width of one mile.

"It is difficult not to grow enthusiastic over this splendid achievement, even though one lives far away. For one who lives nearby, these lakes will be an everlasting source of keen enjoyment and profit."

It should be remembered that in addition to these direct activities of fish propagation and distribution and the establishment of fishing preserves, the Division of Forestry of the Department of Conservation has through its activities, contributed to produce conditions of indirect but great beneficial effect upon the maintenance of an adequate fish supply in the inland waters.

ENFORCEMENT

Recognizing that enforcement plays a great part in the administration of conservation, the Enforcement Division of the Louisiana Department of Conservation was placed under the direction of J. B. Dauenhauer, Jr. He is the former sheriff of one of the most prominent parishes of the state and has wide experience in law enforcement.

The following tables showing the number of arrests during 1928, under the former Commissioner of Conservation, and during the year 1930 and the year 1931, under the present administration:

1928

UNDER FORMER COMMISSIONER FROM JANUARY THROUGH DECEMBER.

January	Arrests	15
February	"	17
March	"	32
April	"	50
May	"	38
June	"	24
July	"	51
August	"	113
September	"	90
October	"	119
November	"	165
December	"	26
Total		740

1930

UNDER COMMISSIONER ROBERT S. MAESTRI FROM JANUARY THROUGH DECEMBER.

January	Arrests	26
February	"	102
March	"	50
April	"	65
May	"	44
June	"	78
July	"	82
August	"	31
September	"	94
October	"	118
November	"	142
December	"	97
Total		929

1931

UNDER COMMISSIONER ROBERT S. MAESTRI FROM JANUARY THROUGH DECEMBER.

January	Arrests	78
February	"	105
March	"	87
April	"	114
May	"	69
June	"	137
July	"	137
August	"	74
September	"	124
October	"	108
November	"	153
December	"	40
Total		1326

OYSTERS

Under the present incumbent, a complete reorganization of the Oyster Division was effected and an equitable system of leasing bedding grounds established.

Under the direction of the Department during 1930, 45,000 barrels of oyster shells were planted in Louisiana waters by the Mississippi packers, without cost to the State of Louisiana. From them, 250,000 barrels of oysters will be harvested this season. Last year, 30,000 barrels of cultch were likewise planted. In May and June of 1930, the Department purchased 12,000 barrels of oyster shells, which were given to the fishermen of Lafourche and Terrebonne parishes as cultch.

The Department inaugurated a more equitable system of leasing shell and gravel beds, and effected the collection of past due taxes on oysters, oyster and clam shells, and gravel amounting to thousands of dollars, and which had been practically abandoned by the former administration.

The present administration also established through legislation a Port of Entry or Collection Depot at Grand Pass. This undertaking required an expenditure of only $5,000.00 and gives maximum protection to Louisiana oystermen and fishermen, and secures for the State its just severance tax on oysters and shrimp shipped out of Louisiana.

The Department has undertaken to make an exhaustive research and scientific study of oyster propagation, food value, and various phases of the industry. This will be of untold value to the State of Louisiana. All investigations are being reduced to bulletin form and will be distributed to the public and to the schools.

Strict enforcement of all oyster laws has featured the administration's activities in the past two years.

WILD LIFE

Extensive improvement of State wild life sanctuaries was one of the first acts of the present incumbent upon assuming office.

Suitable residences for keepers patrolling these sanctuaries were built and fresh water wells were drilled to supply the wild life during the drouth. Watch towers were constructed to facilitate the policing of various sanctuaries. Canals were constructed through these properties to assist in the work of the patrol boats and thousands of dollars are being spent annually to feed both native and migratory birds.

A monumental bulletin on Louisiana bird life, illustrated in natural colors and containing 598 pages, has just been published by the Department, and the Louisiana Fur Animal bulletin has recently been revised.

This administration contemplates expanding the Northwest Louisiana Fish and Game Preserve to include a vast game propagation farm in the area between the lakes, comprising a vast fish preserve now nearly completed. The spillway dam alone in this preserve being constructed at a cost of $50,000.00.

Extensive improvements have been made to the Department's club house and public shooting grounds at Pass-a-la-Loutre, near the mouth of the Mississippi River. A complete revision of the trapping system of the State has been established.

A new ruling from the Department of Justice gives the Department of Conservation control of the expenditure of the local trapping license fund, by supervising the appointment by Police Juries of agents for the protection of fur bearing animals in each Parish.

FORESTRY

An entirely new system for forest fire prevention has been inaugurated and its effectiveness is proven by the fact, that in 1931 Louisiana lost less acreage than at any time in the history of the State.

The Division of Forestry has a trained staff of three hundred men, and the above record stands out when it is considered it was made during the period of the recent drouth. Louisiana is the only Southern state that has not suffered from heavy forest fires during the past year.

The Division of Forestry derives no revenue from the general taxpayers. $80,000.00 per annum is received from the timber severance tax, $42,000.00 per annum from landowners, and the United States Government appropriates for the State of Louisiana $52,400.00 per annum.

Twenty-one watch towers are maintained and two more towers are now being built. Three thousand miles of telephone wire and three hundred telephones connect the various employees of the Forestry Division for greater efficiency. 5,200,000 acres of forest lands in Louisiana are now under intensive protection and the average loss from forest fires has been less than two percent, which speaks for the efficiency of this Division.

MINES AND MINERALS

To safeguard the public interest, the Commissioner has required strict enforcement of all mineral laws and has rendered thereby valuable assistance to Supervisor of Public Accounts to secure for the State the collection of proper severance taxes.

Besides cooperating in the exploration and development under proper conservation methods of oil and gas fields, a number of abuses have been corrected. Under the program of "Correction of Irregularities," was eliminated in particular, one relative to monthly gas reports. Never before has the operators been called upon to account in full for all gas produced, bought, sold, or exchanged.

Hill Memorial Library
Louisiana State University

"Line loss" was a term used to cover any amount of gas taken which the operators did not care to report, and which amounted to a tremendous volume. Perhaps the greatest cause for this was the simplicity of the old form upon which they rendered the required report. It was none too exacting. This report has now been revised, and includes numerous headings to account for practically all the gas handled from the time of leaving the well, until it is finally burned into carbon black, or goes into the high pressure transmission lines.

Another important feature to be mentioned here is that all gas now reported to the Minerals Division of this Department, is rendered upon the standard pressure base of 14.4 pounds. This was not the practice for a long time, and it was necessary for this office to revise and convert many of the reports to this standard base. Changing of computations and forms caused some confusion for a while, but reports are now being rendered satisfactorily. It is evident the work of this Division has been lightened considerably, when it is realized that no less than 150,000 meter charts per year come into that office and all calculations are checked there.

Another outstanding accomplishment of the Minerals Division during 1930-31 is the extinction of three gigantic craters which the former administration had done little to check. They were most destructive, consuming millions of feet of natural gas daily, and would have eventually destroyed vast producing and potential areas of natural gas reserves.

BUREAU OF SCIENTIFIC RESEARCH AND STATISTICS

One of the outstanding accomplishments of the present administration was the enactment of legislation sponsored by the Commissioner, providing for establishment within the Louisiana Department of Conservation, of a Bureau of Scientific Research and Statistics. This was Act 45 of 1930.

This Act authorizes and requires the Commissioner of Conservation, under Sections 1 and 2 of Article 6 of the Constitution of Louisiana, to establish a Bureau of Scientific Research and Statistics to study and compile scientific data concerning the wild life of the air, water, and land, and also the minerals of the State.

The Act provides that the Commissioner of Conservation shall appoint the several research workers as the exigencies of the various Divisions of the Department of Conservation requires. When reports are received from the Bureau of Scientific Research and Statistics as affecting any particular natural resources of the State, and such reports indicate the necessity of regulation of the time, place, conditions, manner, means, or methods of reducing to possession and/or of commercially utilizing such natural resource, a study thereof shall be made by the Commissioner of Conservation, and notice of the finding of such Bureau shall be made public by publication one time in the official journal of the State, and in a daily newspaper published in New Orleans; and a hearing shall be had at the Department of Conservation to consider such report; and notice of the subject matter and the time and place of such hearing shall be given by publication in the official journal of the State, and in a daily newspaper published in New Orleans, three times within ten days.

At such meeting so held, the Commissioner of Conservation, or in his absence, the Acting Commissioner of Conservation, shall preside. Opportunity to be heard shall be given those interested in the particular industry or subject matter of the hearing. At such hearing the Director of the particular Division of the Department of Conservation and the scientist reporting shall be required to be present.

The Act further provides that as the life habits of the sea shrimp have never been studied even by the Bureau of Fisheries of the United States of America, as affecting those sea shrimp in the waters of the Atlantic Ocean and the Gulf of Mexico, and the bays, bayous, and lakes tributary thereto; and as a serious difference of opinion exists among those engaged in the sea shrimp industry, as to whether the time when, the place where, the manner and methods, and the means with which the sea shrimp are being presently taken are proper and calculated to insure a continuity of supply, or an eventual extermination of this natural resource, the Commissioner of Conservation is directed to cause to be begun at once a scientific study by a competent biologist or biologists of the life habits of these sea shrimp, and to secure and compile all statistical data possible so that at the earliest moment possible a report may be made by such biologist or bilogists to the Director of the Fisheries Division of the Department of Conservation with his recommendations and to be acted upon in due course by the Commissioner of Conservation.

Although the special funds provided under Act No. 45 for the Research Bureau were not yet available, the Commissioner of Conservation considered the inauguration of this Bureau so vitally important that he created a preliminary scientific organization early in 1931 to be financed temporarily out of the general funds of the Department, and this organization has been actively cooperating with the Federal Research Bureau, the United States Bureau of Fisheries, and the United States Bureau of Biological Survey.

LIFE AND CLIMATE OF PRIMEVAL LOUISIANA

(*Continued from page 10*)

the marshes and swamps of this period of the earth's history.

Deposits of lower eocene age cover the whole state of Louisiana at various depths and many feet in thickness.

The absence of animal remains in such strata of the Gulf area, has long been a source of wonder to geologists.

Even insects are absent in the leaf remains, yet the type of flora would indicate climatic conditions from which a large insect fauna might be expected.

Eventually, animal deposits may be found in these strata in some unsuspected site.

Many of the existing genera of the birds had their beginning in Miocene time and at the close of this period mastodons first made their appearance in America. The race attained the maximum number of species and size of individuals later in Pliocene time, which period is sometimes termed the "age of Mastodons."

The great southern Mammoth outstripped in size all other land mammals, reaching a height of 13 feet and weighing about ten tons, with tusks 12 feet long.

The camel family also flourished in North America and roamed over Texas and Florida. Although the predecessors of the present day camel were native and abundant here ages ago, they became extinct near the middle of the great Ice Age which followed the Pliocene.

It is an interesting fact that in 1853 the United States Government imported camels for use in the great desert regions as beasts of burden, but the locomotive made their use unprofitable soon after their introduction when the railroads were built.

The great mountain ranges including the Rockies and the Coast Ranges were uplifted during Pliocene time and some portions of the tertiary sea bed now form mountain peaks 16,000 feet above sea level in the Himalayas.

The raising of the level of the continents caused a lowering of the temperature of the earth and an arctic climate prevailed at intervals.

The broad land connections between this continent and Asia and Europe permitted free migration between these countries for land animals.

All of these changes are plainly written in the record of the rocks. To bring them about, however, it took millions upon millions of years.

During the following epoch which is called the "Great Ice Age" or Pleistocene and lasted for 300,000 years, the upper part of the continent as far down as Illinois and Indiana was covered with ice a thousand or more feet thick.

By subsidence, the land connections with Europe and Asia were again broken at this stage, and the continents gradually assumed their present day outlines.

At the commencement of tertiary time, the Mississippi River emptied into the Bay near the mouth of the Ohio River and gradually filled it up.

From these tertiary deposits, the great trough of the Mississippi River was scooped out to a depth of two to five hundred feet by the erosive power of water, favored by the great slope of the country to the southward and aided by the great water supply from the melting ice and great lakes during the "Ice Age."

By another subsidence of the area, this trough became again an arm of the Gulf 50 to 100 miles wide and extended as far up the valley as Cairo.

Once more the shallow bay slowly became filled up, first with estuarian sediments, then with river silt and loess.

In another epoch, this accumulated silt was laid bare by elevation and the river commenced and continued to cut until the bluffs stood two to four hundred feet high along its banks.

Finally, during recent time, the river began building up by sedimentation and has continued doing so, forming the river swamp and delta deposits or alluvium covering 30,000 square miles.

The great river discharges daily into the Gulf of Mexico as much soil worn away from lands which it drains as would a hundred cargo ships each carrying 10,000 tons; and it has been doing this for a period of a hundred million years, so eminent geologists tell us.

Approximately 330 feet per year is the rate of advance of the delta deposits at present.

Many of us take it for granted that the characteristic geographic features and charming landscapes of Louisiana always existed.

So constant do these features appear to stand and so strong a contrast to the shortness and uncertainty of human life do they offer, that they have become typical in our minds of all that is ancient and enduring.

Yet, merely a brief observation of what takes place in nature is all that is necessary to bring assurance of the fact that there is no such thing as unchangableness in either the animate or inanimate things of the earth. Decay and renewal in never ending cycles has been the rule since the beginning of time.

The bayous and lakes, and all of the other outstanding features of Louisiana topography, are of comparatively recent origin. The site upon which the City of New Orleans is built was still covered by water when the Babylonian Civilization was at its height.

The great elephant fauna, so striking a feature of the tertiary, gradually became extinct and with them the giant elks, sloths and bison.

The horse also became extinct in America long before the advent of the red man.

Only a few hundred years ago it was reintroduced by the white man from Europe.

Familiar domesticated animals such as the horse, ox, sheep, goat and pig, all trace their ancestors back to the original stock in Asia whence came also the chicken, goose and pigeon.

Race after race of animals has appeared, played its part in the drama of life and then passed utterly out of existence. One thing that stands out preeminently in the story of the earth is the fact that in the struggle of life mere size or brute force has been of no consequence in the preservation of the species. The prime factor of success in life's race in the organic world has been the facility of adaption to surroundings and to the ever changing conditions in nature. One of the notable characteristics of the new races of higher organisms culminating in man is the rise of mentality.

There is yet no convincing evidence of Man in America before the close of the Pleistocene epoch.

Man's ancestors were creatures so scarce and secretive that they left hardly a trace of their existence amidst the abundant remains of monstrous animals with which they were, no doubt, contemporary.

We are wholly dependent upon a few finds of skulls and bones and numbers of flints and roughly chipped stones, and such articles as were made of materials sufficiently enduring to last through the centuries of time, for any knowledge that we have of ancient man.

Authorities are united in their opinions however, that the original American belonged to the Mongolian Race and appears to have reached this continent by way of Siberia at a comparatively recent time. For subsistence he followed the bison on the grazing range.

The numerous mounds scattered all over the state, and whose origin and significance seems as much of a puzzle to the present day Indians as they do us, are distinct evidences of a race of aborigines who lived in Louisiana in prehistoric times. Even the pottery and decorations are different from the kinds made by recent tribes who inhabited this section.

No dependable information exists, so far as known, as to the characteristics of these original settlers of Louisiana.

Human remains such as rush basketry, flints and pottery fragments which were found in connection with the Mastodon bones at Avery Island, have been carefully studied by Geologists, but doubt yet exists as to their being of similar age.

A tradition of elephant remains being devoured by "Carrion Crows" as observed by human spectators at a spot called "Carencro" in Louisiana, also exists in old writings.

Between the neolithic age and the present period, no exact line of demarcation can be drawn. Each shades insensibly into the other and the records from which the history of the topographic and climatic deviations, the changes of fauna and flora, and of the human migrations and development are gathered, form a common source of information for geological, archaeological and historical research.

From such facts as we find recorded in the sands and rocks, in earth mounds and caves, scientists are revealing to us the years that are past with a reality that is destroying our old fashioned time sense.

By supplementing our present life with this knowledge and with the ability to live and breathe in the past, we gain that sense of the reality of history which adds enormously to the pleasure, and education and significance of our mental being.

It is a great triumph of geological science to have demonstrated that the present day plants and animals of the earth were not the first inhabitants, but the descendants of a vast ancestry coming down through an eternity of time and moving forward into the eternity of the future, towards something ever higher and nobler.

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THE IMPORTANCE AND CONDUCT OF HYDROGRAPHIC STUDIES IN LOUISIANA

(*Continued from page 12*)

a commercial fishery requires for its continued success that it be conducted in proper adjustment to the continued abundance of the animals fished. Such an adjustment in turn inevitably depends upon a knowledge of the life history, the movements and the reproductive success of the commercial form, whatever its species. Physical factors such as salinity, turbidity and temperature, exert the profoundest influence upon the commercial fishery. Such influences are, it should be repeated, of highest practical value and must be systematically measured and analyzed.

LOUISIANA DEPARTMENT OF CONSERVATION PARTICIPATES IN INTERNATIONAL CONFERENCES

(*Continued from page 18*)

gates from Louisiana were called upon to serve on three committees. They were also interviewed by the local press being the only delegates accorded this unsought publicity and were able to bring to the attention of the people of Baltimore some of the remarkable fishery and game resources of Louisiana. There appears to be throughout the Eastern and Northern States the profoundest lack of knowledge concerning Louisiana's natural resources. The Louisiana delegates took with them to the conference moving pictures illustrating some of Louisiana's wonderful wild life and it was found that the showing of these pictures aroused a surprising intensity of interest.

The sessions of the American Fisheries Society were held under the Chairmanship of the Honorable James A. Rodd, Director of Fish Culture for the Dominion of Canada. Mr. Rodd, long an able worker in the activities of the society, conducted the sessions with great skill. Mr. Rodd is succeeded in the presidency of the Society by Dr. H. S. Davis of the Federal Bureau of Fisheries, Washington, D. C.

The sessions of the International Association of Game, Fish and Conservation Commissioners and the American Fisheries Society for the next year will be held at Indianapolis at about the same time of the month of September and it is expected that since the convention city lies so near to the World's Fair which will then be in progress the meetings will have an even larger attendance than usual.

The Louisiana delegates also participated in the session of the Southern Association of Game and Fish Commissioners. Both Louisiana delegates of this year took part last year in the organization of the Southern Association in Hot Springs, Arkansas.

It is highly important that Louisiana, where so large a proportion of the water fowl of the North American Continent winter and a state so richly endowed with other fish and game resources, should take its part in the international activities of these important game and fisheries conferences.

IN MEMORIAM

JOHN DYMOND, JR.

(*Continued from page 23*)

its contest with the State of Mississippi concerning boundary lines, winning the case for Louisiana.

ARDENT SPORTSMAN

An ardent sportsman, Mr. Dymond organized the Delta Duck Club and served as its president until the time of his death. He was also past president of the Izaak Walton League of Louisiana.

Mr. Dymond was a former president of the Business Men's Racing Association which controlled the Fair Grounds Race Track in New Orleans.

Mr. Dymond organized the Tulane Alumni Association in 1898 and was its first president; organized Tulane Night, which won wide favor in collegiate circles, and at the time of his death was a member of the Tulane Board of Administrators.

In addition to having numerous civic and business affiliations, Mr. Dymond was a member of the Boston Club, Chess, Checkers and Whist Club, the New Orleans Bar Association, Louisiana State Bar Association, and the American Bar Association. He was a member of Sigma Chi, social fraternity.

Mr. Dymond was active until within thirty days of his death. His loss is keenly felt by the Department of Conservation of the State of Louisiana, and his high place in the cause of conservation will not easily be filled.

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MANAGING THE ALASKA BROWN BEAR

(*Continued from page 8*)

interesting seabird rookeries. An excellent example of the Sitka spruce-western hemlock type of forest at Lituya Bay is admirably suited for a "wilderness area." Most of the enlarged sanctuary is almost as accessible as the greater part of Admiralty Island, but to reach Lituya Bay by launch it is necessary to cross forty-five miles of open water on the Gulf of Alaska. Since the use of hydroplanes has become common on the coast of Alaska, this bay can now be best reached in this way. The time from Juneau is one hour.

In addition to serving as an extra safeguard against depletion of the bear on the surrounding hunting lands all of the game sanctuaries, existing and proposed, provide an excellent field for students of wild life and some of them for general recreationists as well. It will be seen from the above that the federal government is administering the brown bear chiefly as a game resource but that the other classes of interest surrounding this animal are not neglected. Also the policy is to be followed of coordinating the administration of all the valuable resources of the region, including the bear, to see that each is given the recognition warranted.

Admiralty Island, where the argument for and against widespread bear sanctuaries now centers, has an area of about 1,064,000 acres, or 1,660 square miles, and is located in the most accessible section of Alaska, approaching within twelve miles of Juneau, the capital of the Territory. It has resources that are highly important to the growth and prosperity of that region, including very extensive forests of pulp timber, gold-bearing rock formations, coal beds, water power sites, bear and deer country, and trout fishing. Some salmon canneries, gold mines, logging camps, an Indian village, and a few scattered settlers are located on it.

The timber is a particularly outstanding resource. The forest areas of this region, including Admiralty Island, are to be retained permanently in government ownership and managed by the Forest Service for the continuous production of forest crops with the yearly cut over each large unit restricted to an amount equaling the annual growth on the unit. Southeastern Alaska has virtually no agricultural resources and thus needs a renewable resource, such as timber, to provide stability to its economic life. This island has excellent timber-growing lands and can produce a sustained supply of timber sufficient for 440 tons of newsprint paper daily. The industrial enterprise thus provided for will mean a huge plant investment at Juneau, give yearlong employment to 1,100 men, and supply a product to the United States which is now largely imported from foreign countries.

The harvesting of timber from the Island will not materially affect the bear. Vast sections of the land have no commercial timber and will not be touched by logging operations and under the conservative system of timber cutting that is to be followed only a very small portion of the Island will be under operation at any one time. Once a given tract is cut over it will not be logged again for at least 75 years, the time necessary to grow a second crop of sizable pulp timber here. Logging companies and their employees will be bound by the same laws as other residents of the Territory and will not be permitted to slaughter bear or other game. Small logging operations have been conducted on this Island for many years without any serious conflict with the bear resources and the same should prove true of large operations.

While it will be at least five years before any major logging is done on this Island, the Forest Service, with the cooperation of the Alaska Game Commission and Biological Survey, plans to formulate at once a bear management plan for the entire Island. A bear census is to be made this summer when the salmon run has concentrated the bear population along the spawning streams. With this as a basis the number of bears that should constitute the productive capacity or a reasonable stocking of various sections of the Island will be tentatively fixed and such special rules and regulations will be put into effect to maintain this stocking. If certain sections appear to be insufficiently stocked these can be closed to hunting for a number of years, or until the bear population has satisfactorily increased. If ever found necessary the entire Island can be closed to hunting for a period. This simple practice of temporarily closing an area to hunting has been applied successfully to other game.

The game management plan and the regulations established in connection with it can be readily changed from time to time as better data on the game situation are acquired and as changing conditions in hunting dictate.

The writer believes the federal government can maintain the Alaska brown bear indefinitely and at least in its present numbers by means of game conservation laws, and that such drastic action as withdrawing thousands of square miles of highly valuable lands and holding them indefinitely as wild areas solely to perpetuate the bear is wholly unnecessary and unjustified. There is no apparent insurmountable or even material obstacle to correlating the management of the game resources, including the bear, with that of the other resources of the Territory, giving emphasis in each locality to the particular resource locally the most valuable, but not necessarily disregarding the others. Only a policy of this kind can properly safeguard all of the economic, recreational and scientific interests involved.

1,200 PELTS SEIZED BY STATE RAIDERS

Approximately 1,200 pelts of muskrats, possums and coons were seized during the first week of November by state conservation department officials in a garage at 2816 Milan street. Armand P. Daspit, director of fur and wild life divisions of the department, said that affidavits will be given to the district attorney today charging Louis and A. Masinter, said to reside at that address, with buying fur without a license and out of season.

Trapping season does not open until December 1, Mr. Daspit said, adding that the furs were raw and must have been taken recently. The lot included about 1,000 muskrat skins, 100 coon pelts, and 100 possum furs. Other members of the raiding party were J. B. Dauenhauer, enforcement director, and Captain Philip Gehlbach.

The Ruby-Throated Humming Bird

By CHARLES WEIDNER

About the most impressive example of courage and valor may be found in the ruby-throated humming bird. This little bird's entire length is but a fraction over three inches, his weight is but a scant half-ounce, but his fearlessness is equal to that of the eagle. In him there is no relation apparent between physical bulk and valor. To be a hero one does not have to be a hammer thrower.

This little creature will, without any hesitation, pursue a larger bird, such as a kingbird, a crow, or even an eagle, that comes alarmingly close to its nest. And what is more the larger bird is usually chased in ignominious flight. The routing of these larger birds, Archibald Rutledge said, reminded him of the routing of wicked giants by elfin knights in fairy story doings.

What a lesson in spirit we can learn from the ruby-throat and what joy we can get by watching his exquisite grace, his beauty born of color and light and speed. He seems to possess the noble spiritual import of all innocent beauty and he seems to "compel our laggard hearts to become joyously aware of the ineffable wisdom and the infallible compassion of our Creator."

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Novelty Leathers Sought to Satisfy Fashion Demand

A wide variety of skins is sought all over the world to satisfy the demand for fashionable leather goods, with creatures of the air, sea and land supplying the raw materials, according to a Department of Commerce statement just issued.

American tanners, it was pointed out, have been successful in imitating the grains of many of the newer types of raw stock on cattlehides and calfskins, and the imitations, which are usually distinguishable only by an expert, are lower in price. The full text of the statement follows:

Search for animals affording skins for fashionable leather is world-wide and includes monkeys, frogs, snakes, kangaroos, alligators, crocodiles, and other animals, as well as fishes of various kinds, according to the Commerce Department's Hide and Leather Division.

Skins of fishes, such as certain types of shark, rays, and seals, as well as other marine animals readily lend themselves to the tanner's skill, and result in an attractive and good wearing type of leather. Besides being used for footwear, the shark and ray leathers are also made into traveling bags, brief cases and novelty articles. Seal leather is very largely used in the manufacture of pocketbooks and purses, being given credit for giving exceptionally good service.

Kangaroo and wallaby skins come almost entirely from Australia, but the United States is the largest manufacturer of leather from these raw materials. This leather is very durable and compares favorably in quality with any other kind of shoe-upper material produced.

Alligator and crocodile leathers have been used for many years, and although in the past these were used almost entirely in making luggage, they are now also consumed by the shoe and pocketbook industries.

Leather goods made from snake skins have been very fashionable in the past 10 years, with shoes and pocketbooks being in particularly good demand.

French tanners have been experimenting in the making of leathers from the larger frog skins, and have successfully created a demand for the resulting product as trimmings on various types of leather goods.

Ostrich skins have also been used in producing leather suitable for the making of numerous articles, including novelties and pocketbooks.

An enterprising American tanner purchased a quantity of monkey skins which he tanned and sold to makers of novelties and men's pocketbooks. Although the leather proved quite popular the lack of steady and sufficient supplies prevented any additional output.

Japanese tanners have also been quite active in seeking new types of raw stocks, and reports have been received of leather produced from the skins of large sea turtles. The leather had an attractive appearance, but was said to be too high priced for the existing market.

In this connection it is interesting to note that American tanners have been very successful in imitating the grains of many of these newer types of raw stock on cattle hides and calfskins by an embossing method. These imitations are lower in price and are usually only distinguishable by an expert.

ANIMALS SEEK REFUGE

Big game animals have found a haven in California's national forests, according to the national forest service.

In a report the service gave a census of 1,176,000 animals of the big game variety in the 150 national forests of the states and Alaska.

California led in two of the species with 284,360 deer and 8,480 black and brown bear.

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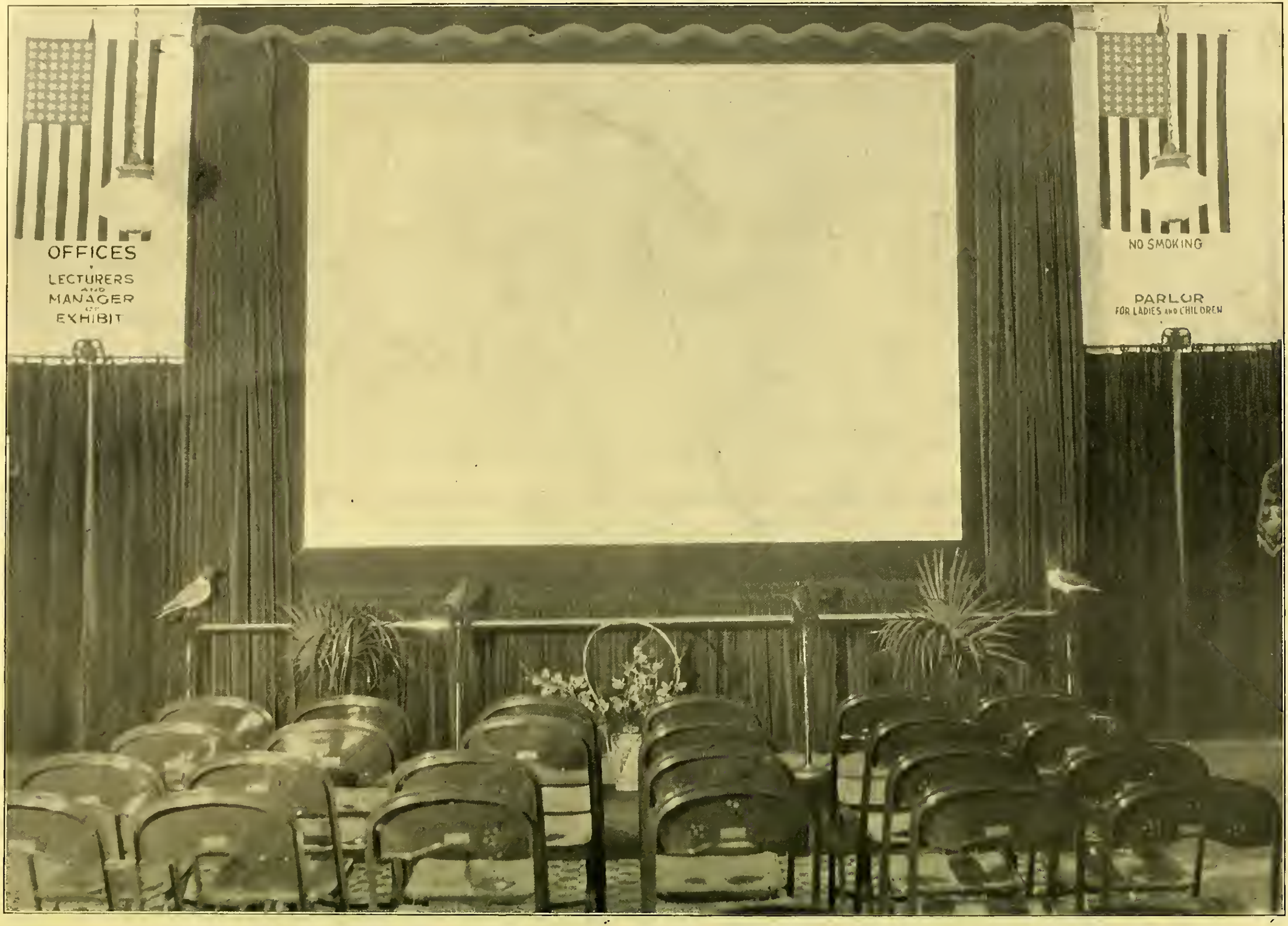

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